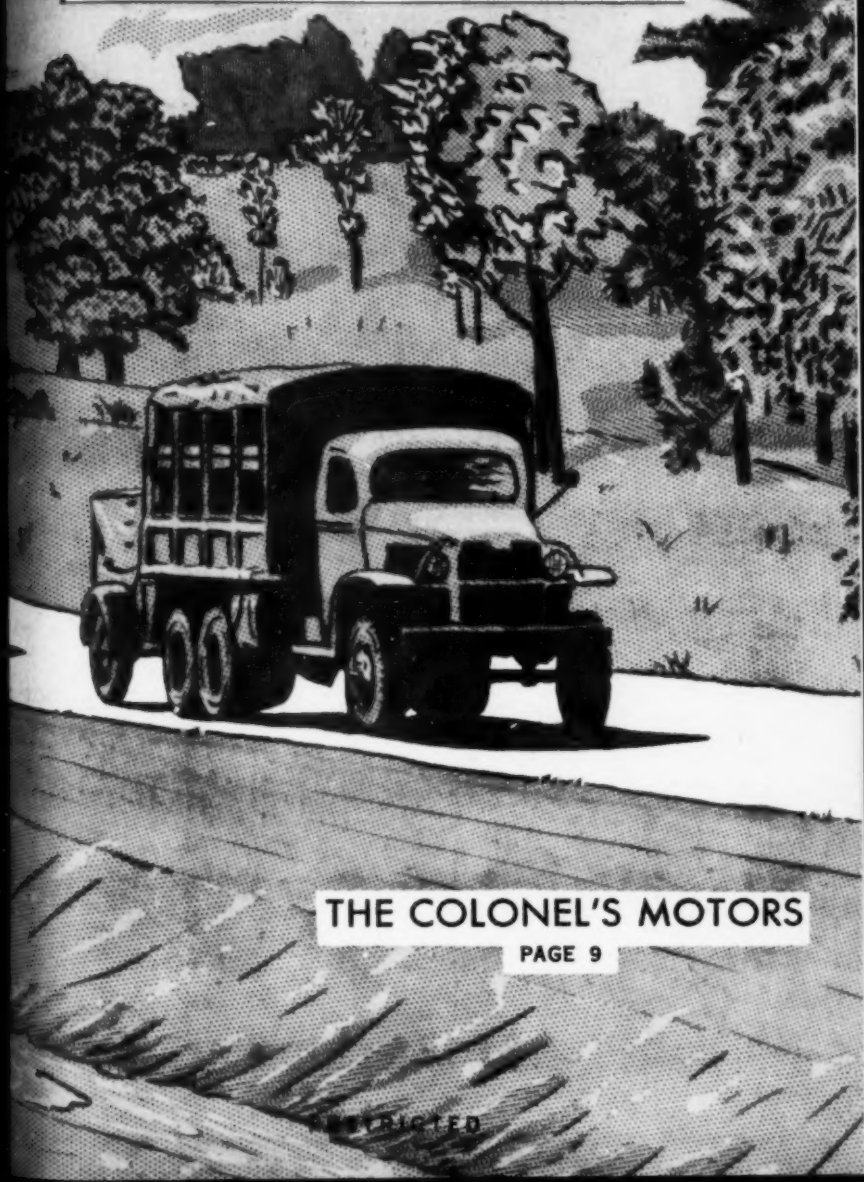
INFANTRY SCHOOL QUARTERLY

APRIL 1950



THE COLONEL'S MOTORS

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RESTRICTED

INFANTRY SCHOOL QUARTERLY

The latest thought on infantry
by the instructors of
The Infantry School

THE INFANTRY SCHOOL, FORT BENNING, GEORGIA

RESTRICTED

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The Colonel's Motors

By Lt Col John T. Ewing, Infantry

75th Infantry
Fort Breech, Arkansas
23 January 1950

Captain Jason B. Hogan
—th Co, 3d Student Training Regiment
The Infantry School
Fort Benning, Georgia

My Dear Hogan:

I presume you are well started in your studies by now, so I'm going to write you on some matters very close to me, matters which are to be your very serious concern. As you know, I plan for you to be my motor officer when your school is over.

Recent division command inspections and a short field exercise indicate the motors of this regiment are barely standard, if not below. I have some very clear-cut desires, which I will expect you to carry out when you return here from Officers Motor School at Fort Benning.

These desires of mine may bear some checking and I want you to take care of the problem while you are a student and advise me as you get the answers. I need not say that I want frank expressions from you, based on what you are learning.

Now, to begin with, as my motor officer you will be a full-fledged commander, as commander of the service platoon of service company, and a special staff officer at the same time. I might say that the division commander shares with me the view that with the right conception and understanding of his job, the average motor officer is in the enviable position to "write his own ticket." I will give you adequate opportunity to do so.

First, as a bona fide member of my special staff, you will represent me and will formulate policies, prepare certain orders and plans, and, with my approval, participate in supervising their execution.

Second, as commander of the service platoon of service company you will control directly the movement of motors and their maintenance in my regiment.

Your success in "writing your own ticket" will rest largely on your technical knowledge, practical understanding of your job, leadership, and developed ability to deal satisfactorily with my staff officers and subordinate commanders.

You will concern yourself not only with vehicle maintenance in the regiment, but also with some other functions which may occasionally have priority over maintenance.

Lacking proper orientation, some motor officers do not conceive of their duties extending to the transport of personnel, fighting equipment, and supplies. These people, in their worthwhile desire to have all vehicles mechanically perfect, relegate to the background their motor officer functions which deal with transport. With such a narrow view you would have a difficult time with all echelons in this organization. At the least I shall sometimes require you to submerge your personal desires and ambitions for perfect maintenance and give way to command requirements, for the moment, not conducive to good motor maintenance. I shall expect you to keep abreast of my command requirements. You will be the one to advise me and my staff when certain transport operations should take precedence over maintenance operations. Only when a projected operation, directly affecting the success of my training or combat mission, is seriously threatened by lack of maintenance will I expect you to advise authoritatively the precedence of maintenance. I feel, therefore, that you should have completely developed perceptions of your job and that you should know where you fit into the picture of delivering hot food to infantrymen, of transporting a combat team, and, not least in any sense, of *keeping them rolling*.

Immersed there at school in the hidden mechanisms of motor vehicles, the training of drivers, preventive maintenance service, trouble diagnosis and repairs, you wonder, I will hazard a guess, just what I do expect with regard to maintenance. In FM 25-10 you will find over three pages of duties. To let you know what I want, I am going to break down your maintenance duties under a number of headings—organization, training, supply, maintenance operations, and inspections. You will be the hub of the whole set-up. But, in setting up the regimental maintenance organization I want you to exercise a lot of care that you do not take over my unit commanders' prerogatives.

I want a simple efficient motor park or field set up for training, supply, maintenance, and inspections. I expect to hold you personally responsible, for suitable forms, records, and reports; establishment of a dispatcher system; fire and safety precautions; traffic within the motor pool or bivouac; and interpretation of regulations, technical data and procedures - in other words, for an applicable standard operating procedure which fits the pecularities of the organization and its surroundings as well as the requirements of division.

As you develop the administrative organization, I believe motor policy will develop also. The two go hand-in-hand and one cannot function without the other. Policy will take our closest scrutiny and thoughtful study. I feel that one approach to stating a policy is to define it as a *receptive and functioning condition of motor mindedness* that is held by all commanders and is fostered by these commanders throughout their commands. As my representative you will have to *sell* a policy by a direct purposeful approach to your duties, coupled with a clear regard and understanding of the responsibilities and missions of my unit commanders. Enough of this policy business for now. It will be the subject of our first talk upon your return here.

The second duty I want you to consider is training. We have had some unfortunate occurrences here which are directly attributable to lack of training. Needless to say,

events took place which have embarrassed me and this command. Training of motor personnel has become the grave concern of the division commander as well as myself. One soldier was killed recently when a driver attempted to pass a milk truck on a curve. One weapons company became immobile for quite some time as a result of orders from a motor officer for drivers to tighten all nuts and bolts on trucks. All brake adjusting nuts were tightened and wheels were locked until our few skilled mechanics could readjust and check all brakes. Most of our trucks are well-painted and present a pleasing appearance but they spend more time on deadline than on the road.

I find that, except for a few motor sergeants, mechanics, and drivers, our regimental motor people are not technically trained. I found my company and battalion commanders making their command inspections at a fast walk through the motor park at 1130 on Saturday. One of my commanders, I have been advised informally, directed the changing of water in batteries. Naturally, these deficiencies are being cleared up as they appear. However, it will be many months before fundamental indoctrination is completed.

The local unit schools go a long way but I am convinced they are not a substitute at all for an automotive course such as you are attending. Upon your return I have in mind a regimental school. I want you to give the closest scrutiny to the selection and training of drivers. Whether we like it or not, our maintenance and transport capabilities depend on our drivers—their quantity and quality. Mechanics and motor sergeants develop from drivers who demonstrate mechanical aptitude and leadership.

Motor officer selection and training are a separate concern of mine. We have some unhappy lieutenants, who are motor officers in addition to their other duties, who possess no mechanical aptitude and, who—to hear them tell it—*do not* and *will never* like the inanimate object called a truck. I find this attitude caused largely by ignorance—lack of, or improper, training.

The same attitude prevails in other places. Recent in-

doctrination is improving the situation but we need more of the thorough schooling that you're getting. You will recommend motor officers and work between me and my commanders to get them off to school.

Now merely training people by getting them off to school is not enough. Constant help and guidance through their problems will be your supervisory duty. It will be a daily affair and will require all your leadership ability for success.

I have emphasized the need of motor officers' formal technical education—that is, attendance at The Infantry School's Motor Officers' Course. A schooled motor officer can effectively correct and improve mechanics' technique and produce more effective work if he commands the respect of his technical personnel. On the other hand (and I have observed this), human nature being what it is, it is doubtful that motor sergeants and mechanics will long listen to any motor officer less informed than they are on the subject of engines, chassis, and their services, repairs, and operations.

The third duty under maintenance that I am very concerned about is supply of vehicles, parts, tools, materials, and ordnance help. Make it your job to be well versed in pertinent supply regulations and local ground rules so you can supervise and channel the flow and use of maintenance supply for this regiment. I will not tolerate hoarding and overstocking of spare parts. You will insure that our allowances are not exceeded and that our needs are programmed and made known soon enough for timely ordnance action.

Much of what I have already written you, Captain, is preparatory to the subject of maintenance itself—the daily, weekly, monthly, and semi-annual services and repairs, replacements, and minor modifications as ordnance may direct. I want our services set up so that they occur, or at least are planned to occur, in a regular cycle. You will do this planning for your own command as well as for the semi-annual service for all companies in the regiment. I want you to supervise the service planning of other com-

panies. Too many of their plans look good only until I examine the deadline reports; plans are not yet effective. Our people need training for this type of planning. Further, I want the motor people to be able to perform these services under the not-so-ideal conditions we find in the field. You will consult with S-3 and S-4 to coordinate your maintenance plan with training operations of the future.

Finally, but not least important to maintenance, and very important personally to me and my commanders, are the command inspections. Regulations require us to inspect frequently to verify functioning of maintenance and operating personnel and compliance with prescribed procedures and regulations. You will accompany me on these inspections, and some you may perform in my name. I want a clear understanding throughout the command of the desired end-result. First, command inspections are not to be a "bob tail affair" (as I have experienced)—neither are they to be conducted at a fast walk thirty minutes before lunch on Saturday morning (as I have seen). Look up the technical manual and bring me back some information from your school on how to conduct inspections. I want the deficiencies in equipment and personnel to be found and I want conclusive corrective action on deficiencies in supply and training. Personally, I need to know—and you can expect to teach me—how to inspect a driver and his truck and equipment intelligently. It seems to me that the driver may be the key to the whole business of my motors.

In contemplating the mobility requirements of a division field exercise in the near future, I find myself concerned also with our effectiveness in transporting personnel, fighting equipment, and supplies. Fortunately my interest in the matter has a contagious effect in the command.

I shall communicate with you along these lines again in a few weeks. In the meantime, write me along the lines I have indicated.

B. F. FINCH
Colonel, Infantry

14 February 1950

Dear Hogan:

We returned from a 14-day exercise last week. Your two letters were received here and forwarded to me in the field. Some of your suggestions I have been able to use—others will have to wait until you get back here and until more motor people have been trained.

Your most important suggestion concerned the responsibilities as well as the prerogatives of my unit commanders—with regard to their motors and to the regimental motor officer. So tactful were your paragraphs it was necessary for me to read them three times. I am handling your letters personally. You may be utterly candid with me.

Your approach to your problem of dealing with those people is correct. You have accumulated some knowledge and experience in leadership and in dealing with people. You will need every bit in dealing with my commanders; they are strong leaders. The crux of the problem will be for you to show them briefly and specifically where their responsibilities lie in terms of motor personnel, material, and operations.

The regulations are a bit general to draw on when I alight in the motor park. I am not able yet to sense the thoughts and problems of the motor people who work there—my commanders have the same difficulty. I want you to make an approach to them which will leave them feeling kinship, awareness, and understanding of the role of motor personnel, material, and operations.

We learned some lessons on operations in the two weeks' division field work. Our vehicular mobility did not come up to my expectations. Much has to be done about SOP's and the integration of our commanders, staffs, and motor personnel. (However, before I go on with that subject, I wish you would find out if any of those people down there are thinking of mobile cross country infantry carriers. Desired mobility is rationed by present vehicle capabilities and inability to go cross-country like tracked vehicles.)

Now, about transport of personnel and fighting equipment. As a member of my special staff, you will be the

planner and operator for motor movements of the regiment. Of course you will coordinate with S-3 and S-4. S-4 will have to provide *borrowed* transportation and S-3 will issue the complete movement order. I want you to operate the plan of transportation employment. In the recent exercises planning and operation were completely up in the air and there was more venom directed at truck handling than at Aggressor forces.

There are several steps necessary to unravel this notably badly snarled-up situation. To begin with, my S-3, S-4, you, and the battalion motor officers must work together very closely on the estimates for, and the handling of, personnel carriers.

The S-3 determines requirements for tactical troop movements. The S-4 estimates the number of carriers needed, basing his estimates on the type of move (tactical or administrative); whether or not it is to be by shuttle; and on such considerations as weather, distances, destination, and mission at the destination.

We'll receive an allocation of personnel carriers from division in the form of truck companies or a combination of vehicles from other units organic to the division. More often than not the allocation will not be identical with the estimate submitted. Here, at this critical point, is where you and the battalion motor officers come into the picture. You must break down, equitably, the allotted vehicles. And don't forget the medical, heavy mortar, tank, headquarters, and service companies. My headquarters was tied up and delayed recently through this common oversight.

Naturally each battalion motor officer will attempt to get all the vehicles of his original estimate—plus a little more. At this point you must take a firm stand and look at the allocation in the light of the regiment's needs rather than the needs of any of its units.

You will be breaking down the allocation of vehicles under all circumstances of day, night, rain, snow, and, not least, mud. You are not going to have time for re-allocation study as the columns of trucks roll in from division. I want you to be minutely informed and have at your fin-

ger tips the actual and practical, as well as the desirable, transport needs of the battalion and companies—and I want quick and accurate decisions.

At first glance you may think the retention of such information is impossible. However, remember you are on the job daily in matters associated with the regimental transport set-up, its deadlined equipment, and the rock bottom needs to move personnel and fighting equipment. You must know what outfits are holding out empty trailers and other vehicles, and, consequently, when division shorts you on trucks, you will know just how thick and how thin to spread this shortage.

For your benefit, I will relate the incidents of receiving personnel carriers at 0200 one morning about two weeks ago. The regiment was to move without shuttle to an assembly area about 25 miles away. Plans called for my motor officer, his platoon headquarters, the battalion motor officers, and one guide each from regimental headquarters company, medical company, and service company to meet the incoming personnel carriers from division. Planned breakdown of allocated transportation was good and there was little overall shortage. As the trucks rolled up the following took place: One battalion motor officer failed to show up (his battalion executive had him checking organic truck loads); two guides missing from two companies; one company guide asked what to do with his three trucks; division shorted the regiment four personnel carriers and counted a maintenance truck as a carrier as well; the officer from one block of trucks of an organic division unit refused to have his trucks administratively split between two of our battalions; and the delay caused by the foregoing caused the division G-4 to show up and demand the road be cleared for passing trucks of another regiment. As usual a heavy downpour of rain commenced and paper calculations for a new truck allocation by my motor officer came to an abrupt halt.

Captain, I never, never, never expect to do your job of transportation officer for this regiment. I have made necessary corrections (except for weather) to eliminate a re-

currence of the above. I will back up the policies, orders, and SOP in person, and go to division where necessary, but I do not intend to do the job of my subordinate commanders or my staff.

After a march, borrowed personnel carriers are released and sent back to parent units or division control by the same control personnel under you. I want you to be sure you know where those personnel carriers are going when you release them after a march. I approve of a written receipt where you lack confidence in the ability of the person in charge of empty carriers. The division commander also approves for training purposes. He does not (nor do I) like to have our empty carriers captured by Aggressor merely because instructions to the officer in charge were not followed.

Even at this point you may be wondering how an officer can be expected to do so much—and I have yet to cover an actual march. The answer is just this: Training and SOP. If you have already covered motor marches at your school, you may have learned that much of their success depends on the activity and training of the motor people—particularly you. I expect you or a responsible officer representative of yours to be at the head and tail of the entire regimental column. We must have a trail officer for accidents and decisions on abandoned or disabled vehicles. I want someone at the head of the column to advise me and to collect and dispatch empty personnel carriers at our destination. I want someone doubling the column to check up on conduct of drivers. Your people must know what to do at the scene of fatal and near fatal accidents. It is not necessary for a whole company command to stop along the road and investigate and observe the results of a fatal accident. You must have a strong representative or yourself at the IP to start and clear all march units. It will be necessary for you to *be in on* planning for route reconnaissance; traffic arrangements (including guards, patrols, control points and control officers); numbers and sizes of march units and serials; and appropriate uses of open and closed columns.

These instructions are not to be in my operation orders. I want them incorporated into SOP and reduced to routine. Invariably I want you to see to it there is someone both in the route reconnaissance party and in the quartering party who can estimate bridge capacities and who can recognize hard standing for our heaviest truck. I do not approve of a kitchen truck going *through* a bridge. A concealed bivouac in which the trucks are up to their hubs in mud is not the kind of tactical advantage I seek. Too many reconnaissance parties have selected short fast routes in terms of jeeps. Too many quartering parties reconnoiter bivouacs without alighting from jeeps and without examining ground slope, drainage, and hard standing.

Don't forget the battalion motor officer and his problem. He also heaves and hauls with the people who want rides —the company commanders. He also may have a tough time with the battalion commander for not bringing back enough personnel carriers. You can help this situation by visiting each battalion commander as his battalion is loading. I want you subsequently to report to me the personnel carrier situation with regard to the battalions, and I expect to rely on your judgment and recommendations on last minute requests to division for more carriers.

Referring to your recommendation on giving my commanders some familiarization instruction in the truck engine and chassis, it would appear that that is why *you* are down at school. Write me more on this subject, but I do not expect my commanders to do the technical work of motor officers.

B. F. FINCH
Colonel, Infantry

27 February 1950

Dear Hogan:

You may run your officers' engine and chassis familiarization instruction upon your return. It never occurred to me that my commanders shy away from the motor pool and their command inspections because they lack knowledge of a few fundamentals needed to inspect intelligently.

As you indicated, the personal interest factor regarding their personal cars is ripe to exploit for a military purpose! I shall attend your regimental school on this subject.

Thank you for your information on the T-51 carrier. If it and like type vehicles you mentioned become the equipment of infantry divisions, there will be more favorable factors introduced into infantry tactics—fast surprise envelopments, rapid shifts of reserves, and sustained supply.

Transport of supplies, incidentally, was the subject of bitterness during the recent division maneuver—there was much controversy on the separate and joint responsibilities of combat and administrative troops. My acting motor officer, being in command of the service platoon, was at the hub of the difficulties. I want the administrative supply problem taken off the backs of the combat people as much and as often as can be. Notwithstanding, I expect the combat elements to make known their needs with all the timeliness possible and to help themselves. I have prescribed that supply impetus is from the rear—but that does not authorize inertia at the front. Training, association, and SOP are the practical answers.

The whole supply set-up of my regiment revolves about S-4 the planner, service company commander the executor, and you the operator. In the supply game there must be a definite starting and stopping point—otherwise, in the case of food, we start with edible animals or the products of Mother Earth and run through the whole gamut of civilian industry, the Army supply system, and end up with a man's stomach. We are working in three echelons, regiment, battalion, and company. You, the service company commander, and the S-4 are administrative personnel and there is no excuse for the existence of any of you, or the service platoon, if combat people carry the administrative load of supply.

My S-4 makes our supply plan. I expect him to be all over the area like a barnyard rooster—he's got to be completely informed on my operations. As I have pointed out, the service company commander is the executor of the S-4

plan. You operate the plan. The success of our supply plan and its execution rests largely with the state of training of your truckmasters, other noncoms and drivers of the battalion and company sections of your platoon, and the state of maintenance of the trucks.

The most common method of physical movement of supply has been for our trucks to go to division distribution points, load, and return. Rarely will division deliver to us. On the other hand, we are assumed to be equipped to deliver to and through battalions to companies. I repeat—*through!* I have run into some misconceptions within the regimental echelon. "Division doesn't deliver to us; why should we deliver to battalions or companies?"

Captain, we will deliver supplies when and if necessary.

I have written you at length of the supply system I am putting into effect. On that system I will expect you to base your training plans for your platoon. Advise me of current teachings at the school.

Training and maintenance within the transport units of your service platoon, are the backbone of supplying my command. We have had too many late meals, too many short water rations, and too many gasoline and ammunition shortages because the service platoon drivers could not read maps properly, could not drive well, and did not service their trucks properly.

The success of the battalion sections hinges greatly on the truckmaster—his ability to get his trucks loaded and up to the battalion and companies. You must train these key men intensively. Each operates much of the time alone; even under battalion control his work remains the same in so far as officer supervision is concerned. Battalion S-4's and supply sergeants have their own supply plans which include movement of supplies by weapons carrier and by hand-carry. I want those battalion supply people to be able to operate to the front and I expect you and your people to make it possible. The separate companies have the same problems and I want them to operate to the front. Moving food, kitchens, water, fuel, and ammunition is a daily problem. You have some help in the munitions people. Yet

circumstances often compel, and I constantly observe, drivers of the service platoon being sent out alone to get their loads and deliver them to companies. This individual dispatch frequently is a requirement. Train your drivers accordingly. There is no acceptable explanation when supplies run out in combat.

If I have dwelt at length on putting supply movement on your back and on the backs of NCOs and drivers, it has been to emphasize your job as an operator. The job boils down to training and the supervision of operations. You do it by working closely with and under the company commander of service company. This is a circumstance where your functions on my staff are not a line of demarcation between you and the company commander. Transport of supplies requires a healthy attitude between you two individuals and I'll have that. Practically anything less will sooner or later cause a breakdown in my supply.

In working with your company commander, you will assist him in running the service company bivouac with all its requirements and ramifications of location, security, communications, concealment and cover, traffic, and subdivision into areas. Much of the difficulty of these tasks is removed by proper training and parceling out duties to all personnel. Some of the guard and administrative chores can be performed by *too sick to fight all day* personnel who drift into the rear echelon. I expect to find a functioning military household in my rear echelon.

In the battalions and companies there are related supply transport problems which confront you as my staff officer as well as the operator of my supply plan. I don't believe that those people know how to coordinate and utilize their many jeeps and jeep trailers. They have lost 2½-ton trucks by moving them too far forward. Battalion S-4's and motor officers do not always coordinate their plans. When the battalion section is released to battalion control, it falls to the battalion motor officer to fit it into his bivouac, maintenance, and march planning. The battalion supply officer will generally control its supply activities, but if bat-

talion section vehicles fail through lack of servicing, I want the battalion motor officer to dose the remedy.

The battalion commanders are aware of my desires. Supply through battalions and companies rapidly drops from 2½-ton truck loads to ¾-ton and ¼-ton truck loads in forward areas and thence to hand carry. The battalion motor officer, again while he may not make and direct the supply plan, is an integral part of it where trucks and drivers are concerned. I want you to observe *frequently* the supply transport problem in the battalions and separate companies up to and within the front lines, among weapon positions and individual riflemen. What you see will more clearly emphasize your job.

Hogan, we will expect you back in another few weeks. I trust you are learning the technical end of your job and I expect the regiment to benefit from your motor schooling. Our correspondence has been gratifying to me and should be informative to you from the standpoint of providing the necessary maintenance, transport of personnel, fighting equipment and supplies for a successfully executed combat mission of my regiment. I have not delved into the detailed personnel and equipment for your job—I have looked at your duties to fit you as a necessary gear in the regiment's transmission—and not an idler gear either.

B. F. FINCH
Colonel, Infantry

"*Lieutenant, Take a Patrol—*", by Capt Robert G. Kimball—a combat patrol problem to be solved by the QUARTERLY'S readers. In the July 1950 issue of the QUARTERLY.

Prepared for Inspection

EDITOR'S NOTE: This article representing the opinions of the writer, does not necessarily reflect the thought or opinion of The Infantry School. It is published for its thought-provoking content.

The notice on the company bulletin board read:

1 April 1950

Colonel Crank will inspect this company, its personnel, and garrison and field equipment on 5 May 1950. All noncommissioned officers will report to the orderly room at 1300 today.

For the Company Commander:

J. Brown,
1st Sgt.

Now let us see what went on in the company between the time this "warning order" was published and the day Colonel Crank inspected.

The noncommissioned officers assembled in the orderly room at 1300 to hear the first sergeant. First, however, the company commander made a brief opening address to the effect that he was certain the noncoms would see to it that the company presented a superior appearance on the day of the inspection. He pointed out that they had 35 days to do this, and that, although he considered the company to be in very good shape at present (it was), it was always possible to make changes for the better.

Then the first sergeant took over the details. He said: "OK, we're gonna give the Cap'n what he wants and knock the colonel's eye out. . . .Supply Sergeant, any suggestions?"

"I'll need an extra detail every day," the supply sergeant said. "I want to give the supply room a paint job and sand and varnish the floors. The weapons could stand a touching up, too. Say about six men."

"You'll get 'em," the first sergeant said. "Does Utilities have paint and varnish?"

"Don't worry," the supply sergeant grinned, "I'll get it."

The first sergeant turned to the mess steward. "What about you?"

"If you can fix me up with a couple of extra KP's and all the '104' boys, I'll be OK. Also I want to buy some new curtains for the mess ha—dining room—and I'll want some flowers on the tables when the colonel inspects."

"OK, I'll get the Cap'n to buy the stuff on the Company fund. And listen, be sure to have a top-notch meal for the inspection. The colonel may eat with us."

"I'm way ahead of you," the mess steward said.

The first sergeant looked at the transportation NCO. "Smith, what about your department?"

"I hope you can fix it to cut down on running the vehicles so much," Smith replied, "and give me a chance to get them in A-1 shape, painting and all. Then about ten days before the inspection I'd like to have some extra men to put on the final touches."

The day room orderly now came into the picture. He said: "I think we ought to get some of those new leather covers for the magazines — they look good with the names of the magazines stamped in gold print. Also I'd like to get Walters, the company artist, to paint some murals on the walls. We need some new lamps too, and some of that heavy linoleum would really slick the place up — give it a homey atmosphere. I sure would appreciate it if you could keep the guys out that last couple of days before the inspection."

For the next half hour the first sergeant exhorted the platoon sergeants and squad leaders. "Look," he said, "the inspection is Class A with rifles outside and full field on bunks inside — the colonel gets to look at everything. Get the extra shoes over to the cobblers for new heels. The supply sergeant will finagle new shelter halves — at least for the inspection. Bleach out the tent pins with salt so they're white. Start on the mess gear right now — get it burnished. Get the clothing stamped with the last four

digits of the serial number. Watch those rifle stocks, look for dirt in the butt plates. . . ."

And on and on. The first sergeant forgot nothing, right down to the uniform brand of tooth powder to be displayed by the men with their field equipment.

In the month that followed the company hummed with activity. Noncoms were adjured and privates sweated. A former landscape artist was discovered and performed wonders of horticulture. Michelangelo himself could not have done a better job on the murals in the day room. Weapons gleamed. Trucks shone. Floors invited one to eat off them.

And during this period, what of the training? It can be reliably reported that the training went on as usual, though a keen observer would have noted a thinning of the company's ranks as it marched to the training area. Somehow men were diverted to other purposes. Sick callers returning with the doctor's decree of "duty" found themselves performing that duty under the critical eye of the supply sergeant and mess steward.

Came the great day. Colonel Crank arrived with the battalion commander and spent the morning looking at everything. He was nothing if not thorough, but the preparations had been even more so. He was not a fool — 30 years in the Army had taught him the tricks of the trade and he had used them himself as a company commander. He knew what had been going on.

"I wonder," he was heard to remark in a low voice, as he looked with astonishment at the murals on the day room walls, "just how much time that boy lost from plain every day soldiering."

The remark did not call for a direct reply, and the company commander remained discreetly silent.

Then the colonel ate the noon meal with the company — steak. The flowers on the tables perfumed the air. The new curtains were crisply laundered. The apple dumplings, redolent with cloves and cinnamon, were mouth-watering.

"Excellent meal," commented the colonel dryly.

As he prepared to depart, Colonel Crank looked at the company commander. "Captain," he said, "that was a *superior* administrative inspection. If your men can shoot as well as they keep house, you've got nothing to worry about. . . ."

Everyone was happy.

What's wrong with this picture — and what's good about it?

Let's take the wrong first. The inspection did not give a true picture of the company's ordinary state of affairs. It was slicked up like a band wagon and it had plenty of time to get that way. Plenty of time — 35 days, to be exact. We said at the beginning of this article that the company was already in pretty good shape — in other words it was a good company with the normal but not serious defects of housekeeping. But with all that warning it had time to get all dolled up in tails and white tie. It *was* superior on inspection day, but it is hard to say how much time was lost from the serious business of training to the not quite so important business of housekeeping.

The writer maintains that this company gave a false impression to the inspector, who probably knew what had been going on but who had no alternative but to render a superior report — because the company *was* superior. The company commander and his noncoms had seen to that, and they would have been damn fools if they had not.

The account of this company's preparation is not fictional and is not restricted to one particular unit. The writer has spent much of the past 20 years as a first sergeant and company commander in many organizations. The same conditions described above — and the same precautions — prevailed in all those units, with sometimes more and sometimes less warning time. Naturally, full advantage was taken of the advance notice of inspection, and the inspectors invariably rendered a highly favorable report. And some of those inspectors were Army-famous for their ability to see where others had failed to look.

But their impressions were false. What if they had hit the company with 24-hours notice? They would have found

a good company, housekeeping-wise, but hardly one that would call for an unrestrained superior. There might not, for instance, have been steak to eat.

Now let's look at the good part of the inspection. It can be summed up in a few words. It gave the company a thorough housecleaning. It got the shoes mended, the salvage clothing turned in, and it got the weapons an extra going over. It got the day room some new equipment and it prettied up the grounds. And we can't forget that it got the company a "superior" rating, which is good for morale.

But when you weigh the bad against the good, the scales tip in favor of the bad. The inspection was false from start to finish. The purpose of an administrative inspection — to find out the true state of a unit — was defeated. Would it not have been better for the inspector to arrive cold and find out how the company lived in its daily routine?

Notice that we did not say what headquarters the colonel was from. Does it make any difference whether he was the regimental commander, the inspector general, or from the army area command? He got a superior inspection because there was plenty of warning. But it wasn't a true superior. Would you not have a "true superior" when an inspector drops in without warning and finds, despite that fact, that the unit is top notch?

In conclusion, the writer maintains that inspections of this type, if they are to uncover the true state of affairs, should happen without advance notice — with the extenuating exception of units which have just returned from extended maneuvers. And in that case, no more than a week.

Plain English, **by Lt Col Harry W. Stephenson—more about what The Infantry School is doing to make infantry field manuals, training circulars, and other military writing more readable—more intelligible. Scheduled for the July 1950 issue of the QUARTERLY.**

Technique of Instruction: Application*

Compiled by Captain Marvin J. Berenzweig, Infantry

For the first two weeks after taking command of Company A, Captain Ames made few changes. He spent much of his time seeing how things were done, especially the training and instruction. He wanted to get the "feel" of the outfit before making any corrections. In this way he could be more certain that any changes he did make would be for the best and he wouldn't go off half-cocked.

After two weeks, though, Captain Ames had a clear idea of what was going on, the good and the not-so-good. He had no intention of tampering with his administration, which was smooth and easy-working, and a credit to his predecessor and the first sergeant. In fact, he suspected that his predecessor had spent a lot of time on administration, possibly to the detriment of other matters—the instruction, for instance. Ames wasn't entirely satisfied with the instruction; the men weren't learning like they should. The platoon leaders were talking too much during their instruction periods, and the men weren't learning by *doing*. There wasn't, he thought, enough *application* going on. As they say in indorsements, remedial action was indicated.

Like many another company commander, Captain Ames had a full complement of officers on paper, but in actuality he had only two — Lieutenants Jones and Johnson. These two officers, who were doing all the instructing in Company A, found themselves in Captain Ames' office at the close of the second week.

The lieutenants were somewhat apprehensive at first, trying to recall what crimes they might have committed.

*This is the third of a series of short articles on the Technique of Instruction. The fourth, on EXAMINATION, will appear in the July issue.

But Captain Ames' easy, informal manner soon put them at their ease. They watched closely as Captain Ames built a roll-your-own cigarette in less time almost than it takes to extract a ready-made one from its cellophaned package. There weren't many people in the Army anymore who rolled their own, but Ames seemed to be one of them.

"You know, Captain," Lieutenant Jones observed, "I never could roll one of those things. I've tried, but I can't."

"How many times did you try?" Captain Ames asked.

"Oh, a couple of times. I never could get the knack."

"You didn't practice it enough," Captain Ames said. "Which brings me to the point of this conference. I don't think the men are getting enough practice work in their training. Not enough application."

"You mean we're talking too much?" Lieutenant Johnson put in.

"Frankly, yes," Captain Ames replied. "You are talking too much, the men are listening too much — and the men are not *doing enough* themselves. Your talks are well prepared, your visual aids are good, but the fact remains that they are not getting enough time to practice what you preach. As you know, I've been looking on during the last two weeks, and I've got some facts that may surprise you about your instruction. . .For example, you, Lieutenant Johnson, had a two-hour class on the BAR yesterday morning. You told them all about the weapon for 50 per cent of the time, you showed them how it operates for 20 per cent of the time, but they had only 30 per cent of the time to work on it themselves. To sum it up, your talking was way out of proportion to the practical work — the application."

"I didn't realize I was talking so much," Lieutenant Johnson admitted.

"It's a human failing and we've all got to watch it," Captain Ames said. "Most military instruction can be adapted to the telling-showing-doing method."

"About what proportion of each?" Lieutenant Jones asked.

"Around 60 per cent of every lesson should be practical work, 25 per cent showing them how, and only about 15 per cent should be straight talking; that is, telling."

"In other words," Lieutenant Jones said, "Johnson and I have been concentrating on the telling part and not giving enough attention to the doing. . . .I can see now that you're right. I had a class on tent pitching this morning. I told them all about the tent and how to put it up for 30 minutes, then I had a demonstration crew put one up for 15 minutes, and then. . . .and then. . . ."

"And then it was time for the break," Captain Ames finished for him, "which was followed by a different subject. Only a few of the men — the demonstrators — got any practical work out of the period."

"With the result," Lieutenant Jones admitted, "that most of the men still can't pitch a pup-tent."

"I've done worse than that," Lieutenant Johnson ruefully admitted. "Last week I had a class on squad formations. I spent most of the morning at the blackboard making diagrams of the various formations. Fortunately I did have a demonstration squad show the men how it was done, but by the time I was ready for them to do it themselves. . . ."

"The time was up," Captain Ames smiled. "It was another case of telling and showing being way out of proportion to the doing." He began to roll another cigarette, expertly, swiftly. "You know," he continued, "my wife objected to this habit before I got good at it. I used to spill tobacco all over the house. She doesn't mind now; I never spill any."

Lieutenant Jones grinned. "Captain," he said, "I appreciate the way you make your point. What gets me is the way we've allowed ourselves to minimize the importance of application in training. Both Johnson and I knew it was important — it wasn't that we didn't know to begin with. If anybody had asked me a straight question about the best way to teach men, I'd have answered, 'Teach 'em by having them do it themselves.' "

"So would I," Lieutenant Johnson said. "Learn by doing — I've had it drummed into me ever since I've been in the Army."

"Sure you have," Captain Ames agreed. "But sometimes you can't see the forest for the trees. A man gets in bad habits. But it wasn't as if you and Jones had forgotten application entirely. You had some of it — the trouble was, you didn't have enough of it. The situation is easily corrected. From now on we'll have about 60 per cent practical work, 25 per cent showing, and the rest telling, or talking. . . .If you and Jones put as much enthusiasm and sincerity and preparation into the practical work as you did into your telling and showing, you won't have any trouble and the men will learn fast. . . .There are a few points about practical work, though, that you should think about. Supervision, for instance. Help the men, give assistance when they need it, but don't become so overwhelmed with the desire to help that you are actually a hindrance by depriving them of the chance to do it for themselves. Move around through the class, observe, help when necessary, but don't interfere when the men are doing all right. And another point — regulate the pace, don't go too fast to start with, *emphasize accuracy first, then go on to speed and coordination*. This is particularly true when you're teaching weapons. . . .And that," Captain Ames concluded, "is about all I want to say. I don't have to go into details — I know you can do it."

The two lieutenants stood up, and as he reached for his Durham bag again Captain Ames said: "One more point — I notice you've both been doing all the instruction in this company. What are the noncommissioned officers for? Use them, too," and he smoothly rolled another smoke without spilling a speck of tobacco.

Covering the Withdrawal into Bataan, **by Lt Col Bruce Palmer . . . the action that permitted withdrawal of a major portion of Luzon's defenders to Bataan for a final stand. Coming—in the July 1950 QUARTERLY.**

Ears of the Infantry

Compiled by Lt Col Patrick B. Watson, Infantry

Sound locating — Ears of the Infantry

Corporal Clem Riley yelled, "Hey, Ben, look at that contraption those guys are puttin' in over there."

Sergeant Ben Tinker straightened up in his foxhole and looked interestedly at the "contraption." A few yards away three men were stretching a cable into a triangular shape with three mushroom-like pins at the corners. (Figure 1 shows what Tinker and Riley saw).

Near the cable was an elongated chest. As Tinker watched, a man walked over to it and plugged in a cable end.

SWISSSH. . . . WHAMMMM . . . . Riley and Tinker crouched low in their holes as an enemy mortar shell crashed nearby. Tinker thought, *still pestering us with those mortars. Still pinning us down as we try to move forward. Same thing as yesterday. If we could only pinpoint them! They're not far away — one, two thousand*

yards maybe. But that rolling terrain and scattered woods make them hard to find. They can move easy; any small depression will do for a firing position. It's deceptive; can't tell what direction, let alone how far away exactly.

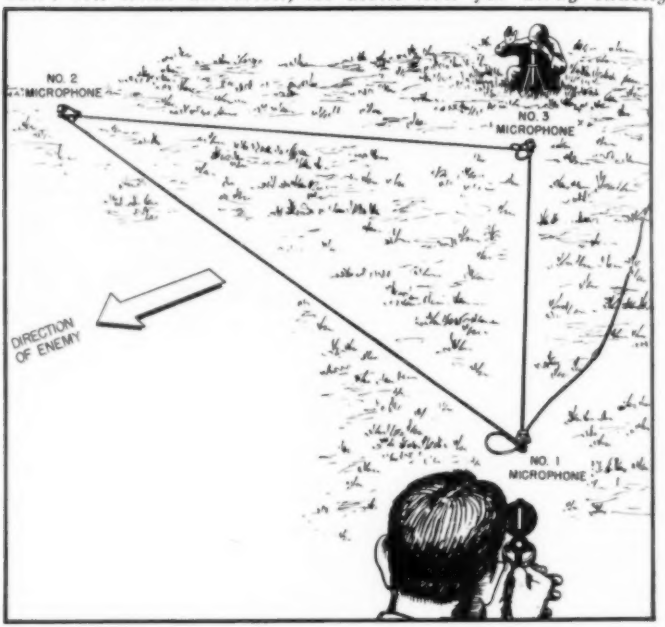


Figure 1. Triangular shape of microphone and cable.

Last night Tinker and Riley went on patrol. They located several enemy positions, crawling so close they could hear subdued conversation. They found a mortar that had caused trouble yesterday, and later they got artillery on it. But now the mortars were firing again, holding up our attack. It was hard to tell exactly where they were firing from, but it was pretty certain they were moving frequently to new firing positions.

That's the trouble, Tinker thought. *The mortars move so easy. Once in a while our observers have a pretty good idea where the mortars are, and S-2 can resect on them.*

Then we can get our heavy mortars or artillery down. Shelling reports are getting more and more accurate. Men are learning that they can help themselves by giving artillery some idea of where to deliver countermortar fire. If we could find out - exactly - where those mortars are—and quickly.

Let's repeat that last thought of Tinker's: If we could just find out exactly where those mortars are—and quickly.

The Army now has a device for doing that.

THE SOUND LOCATING SET, GR-6

The three mushroom-like objects you saw in Figure 1 are microphones—part of a sound locating set, GR-6. This set-up is part of the equipment of one sound locating team. There are two of these teams in each of the three squads of the *counterfire platoon** of the regimental headquarters company.

Figure 2 shows you how a sound locating team may install their equipment in the field; Figure 3 shows the team's complete equipment.

All this is part of a new method of locating enemy mortars—getting counterfire information. By sending this information to our own mortars and artillery, we have a new and accurate method of hitting back at those enemy mortars. It is all based on the fact that we can hear them even though we can't see them. All we need are more accurate ears. The counterfire platoon sharpens the infantry's ears. This article will give you an idea what this can do for you and how it works. To understand it thoroughly you need schooling and training.

Counterfire information is locating enemy close supporting weapons and reporting those locations accurately. Counterfire is destroying or neutralizing them.

In the infantry regiment, counterfire operations are coordinated at the regimental counterfire information center—part of the regimental S-2 section. Actually, the

*EDITOR'S NOTE: The organization of the counterfire platoon, its training, technique, and tactical employment, are covered in FM 7-25, Headquarters Company, Infantry Regiment. This is a new manual that will be published in the near future.

counterfire information center is just the counterfire platoon leader, his charts, and his telephone or radio to the three counterfire squads. He is, in addition to his command job, the regimental counterfire information officer. He is near the S-3 so that he can report located counterfire tar-

Figure 2. The three men have set up their microphones and cables and are digging the recorder in.

gets. S-3 then selects counterfire weapons to hit these targets. The regimental artillery liaison officer drops in often, to exchange counterfire information. S-2 also uses these reports when evaluating enemy strength and capabilities.

The counterfire information officer gathers data from other sources too, and checks it against sound locating information. He plots this and reports it where it will do the most good. He gets shelling reports from front line units, photo-interpretation reports, information from patrols and prisoners of war, ground and air observer reports, and reports from the counterfire squads. In Figure 4 you see the form used to plot this information.

Regimental S-3 takes this data and gives it to the weapon most capable of hitting the enemy mortars. Sometimes this is artillery, and sometimes our own heavy mortar company. And sometimes a front line battalion can hit back with its 81-mm mortars. All of these, and even lighter weapons, may become counterfire weapons when they are capable of engaging a counterfire target.

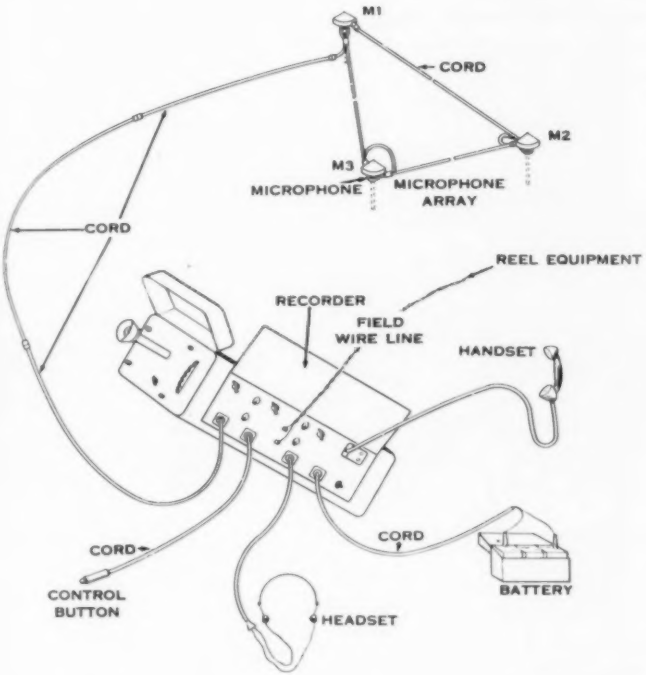


Figure 3. Each of the two teams of the counterfire squad has this equipment.

This is the reason for centralizing counterfire information collecting operations. When the sound locating equipment was first developed, it was a temptation to put it right in the heavy mortar company and use it as a sort of automatic fire direction center. This would have limited

its use. Many counterfire targets would have been neglected when the heavy mortar company was busy firing at targets in support of front line companies. Even when these mortars could engage a counterfire target, the target location would have been based on information from one source only. By keeping the sound locating squads under the thumb of the regimental commander, their information can be checked against other reports, and the counterfire target can be given to any of a wide choice of counterfire weapons.

COUNTERFIRE INFORMATION FORM

	ABLE	BAKER	CHARLEY	DOG	EAST	FOX	GEORGE	HOW	ITEM	JIG	KING	LOVE
SERIAL NUMBER	SOURCE AND TIME	LOCATION OF REPORTING AGENCY	METHOD AND ESTIMATED DIRECTION	METHOD AND ESTIMATED DISTANCE	LOCATION OF SHELLING	TIME SHELLING BEGAN	TIME SHELLING ENDED	NUMBER AND TYPE OF ENEMY WEAPONS	NUMBER AND TYPE OF SHELLS	TYPE OF FIRE	DAMAGE	FLASH-BANG SECONDS OR REMARKS
4	1st C.P. 3rd Bn. 8845	8897566 (Center Track)		Sound Location Through Platoons		0601	0602	1 MED	2 HE	Registration		
6	1 PW Team 8845				7859611			4 MED				Plot (2) (1) on these guns at 0615
1	Danger Bn. at 0542	8896711B	1st Platoon Flash 6184	1 Flash-Bang 405 B	8896711L	0605	0608	2 MED	2 SMKE 9 HE	INTERDICTION	3 CASUALTIES	Area should be on an Infantry Route

Figure 4. The counterfire information officer plots information on this form.

The central control depends on adequate communication. Sometimes communication may be slow or disrupted. Then, as a temporary expedient, the counterfire platoon can be broken up and the squads can be put where they will do the most good without elaborate communication. One squad may be attached to each front line battalion. One squad can work with heavy mortar company, or its platoons. The counterfire platoon leader keeps right on making regimental counterfire information plans. When he has good communication again, he regains control of his squads, and once more they report their information directly to

him. He compares it with other reports and gives confirmed enemy weapons locations to the regimental S-3.

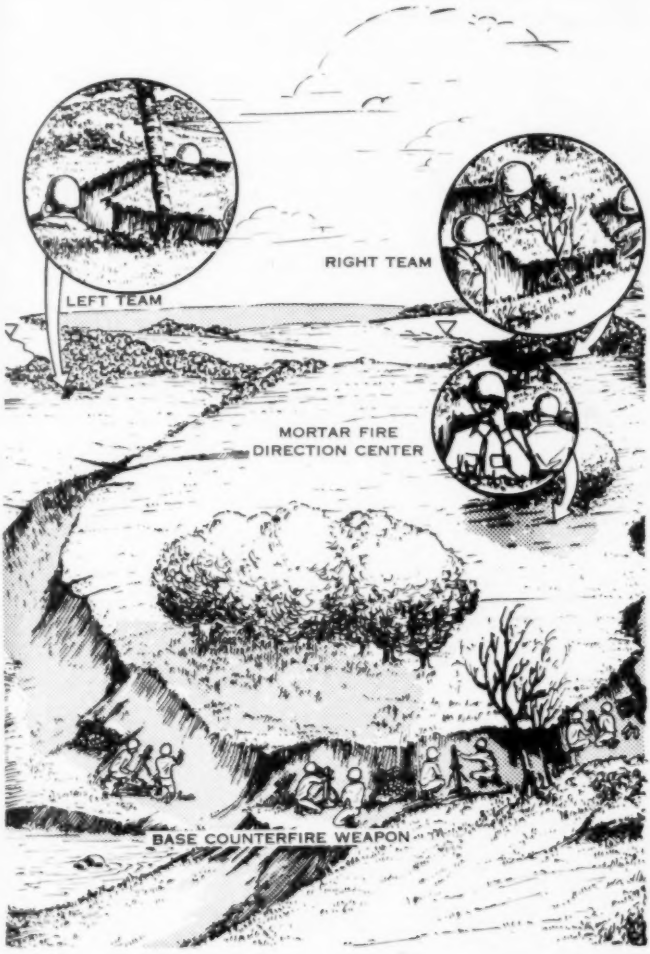


Figure 5. A counterfire squad in close association with a mortar platoon.

When the counterfire squads are decentralized, they often are used in close or immediate association with counterfire weapons. Close or immediate association means that a counterfire squad reports information directly to a counterfire weapon, instead of sending it through the regi-

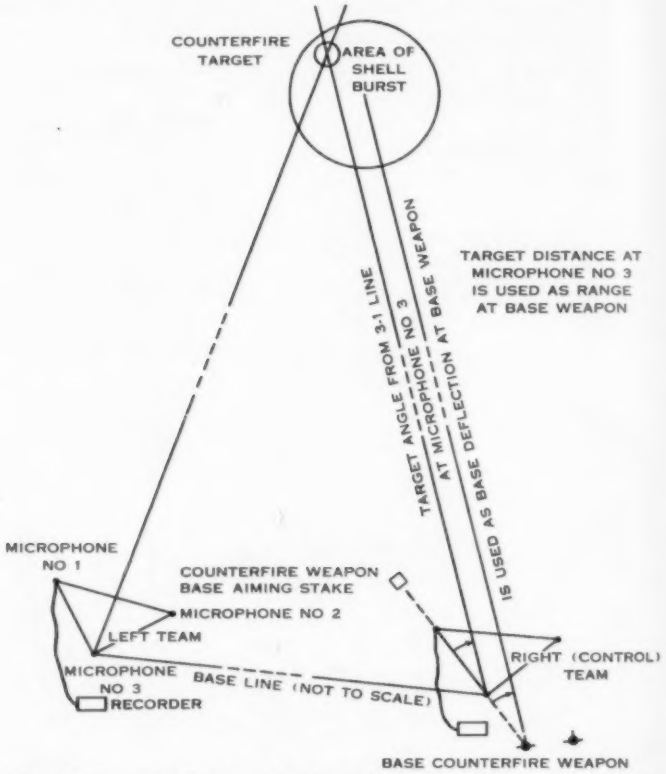

COUNTERFIRE TARGET
AREA OF SHELL BURST
TARGET DISTANCE AT MICROPHONE NO 3 IS USED AS RANGE AT BASE WEAPON
TARGET ANGLE FROM 3-1 LINE AT MICROPHONE NO 3 IS USED AS BASE DEFLECTION AT BASE WEAPON
MICROPHONE NO 1
COUNTERFIRE WEAPON BASE AIMING STAKE
MICROPHONE NO 2
LEFT TEAM
RIGHT (CONTROL) TEAM
MICROPHONE NO 3
RECORDER
BASE LINE (NOT TO SCALE)
BASE COUNTERFIRE WEAPON

Figure 6. A counterfire squad in immediate association with a mortar section.

mental counterfire information center. If a counterfire squad is in *close association* with a heavy mortar platoon it is usually located a few hundred yards from the mortar firing position and is in contact with the mortar fire direction center by telephone or radio-telephone. (See Fig-

ure 5 for an example.) When they are that far apart, their locations should be surveyed. Even when they are not surveyed the mortar fire direction center can convert information from the counterfire squad into firing data by using normal observed fire procedures.

Sometimes, the mortars and the sound locating squad may displace too frequently to allow them to survey and establish communication. Then they move closer together and operate in *immediate association.* In this case, one of the two sound locating teams of the counterfire squad is only a few yards away from the base mortar of the mortar platoon, and information from the sound locating squad is not converted but is used as firing data for the mortar platoon. When the sound locating team and the mortar are only a few yards apart, range and azimuth from the team to the target are about the same as from the mortar to the target. By using this range and azimuth the mortar can hit close enough to the target to destroy or neutralize it (see Figure 6).

Sergeant Tinker and Corporal Riley, the two noncoms who were getting shelled in the opening paragraph of this article, are curious about this new "gadget." They can understand how it can tell what direction the sound of an enemy mortar is coming from—they can almost tell that with their own ears. What they are not sure about is how it can tell how *far away those mortars are.*

"That's what I want to know," Riley says. "How in blazes does it know the distance?"

Tinker, who has been talking to the GR-6 operator, has it figured out roughly like this: Sound waves go out away from noise in a series of circles. The circles get wider and wider like circles on a pond when you drop a rock into it. These sound waves don't reach all three microphones at exactly the same instant. The recorder measures the fraction of a second between the sound reaching any two microphones. (See Figure 7.)

Tinker can now explain this pretty well to Riley. "They use two sets of microphones in each squad, Clem. They set up the two sound locating teams a few hundred yards

apart. Then both sound locating sets pick up the same sound. Both teams figure the magnetic azimuth to the enemy mortar. They plot these two azimuths on a map or on an M-10 plotting board. Where the two lines cross is where the enemy mortar is." (See Figure 8.)

"I get the idea now, Ben," Riley said, and ducked low in his hole as another mortar round crashed close. When

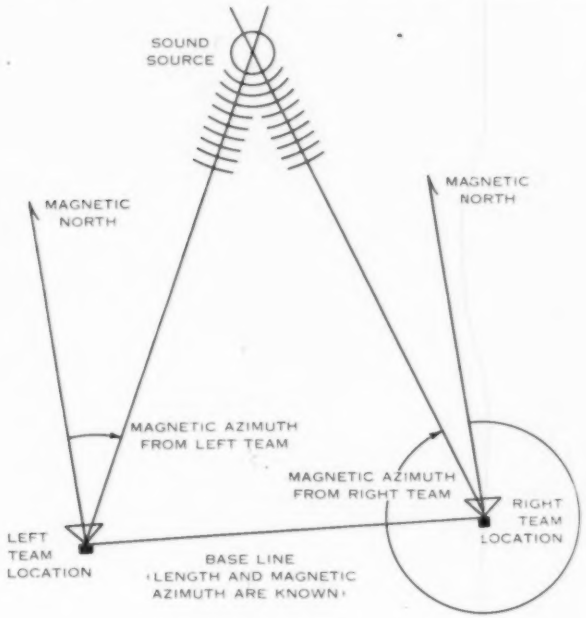


Figure 7. Sound locating equipment records and measures differences in time between arrival of sounds at three microphones in a triangle. (Page 42.)

the dust had settled, he added, "I hope those guys get that gadget working quick!"

Sound locating is a method of finding the source of a sound. This method can be used to survey the sound locating team positions and to pin-point enemy weapons. Both teams of a squad work together to find an enemy

weapon location. One team alone can complete a sound survey on a point that is within our own position. This is because a telephone line can be laid to the sound source when its location is under our control. The sound locating team then uses its recorder to measure the difference in time between the arrival of the sound by air at one microphone, and arrival of the same sound by telephone wire. This gives the distance to the sound source, and is called *sound ranging.*

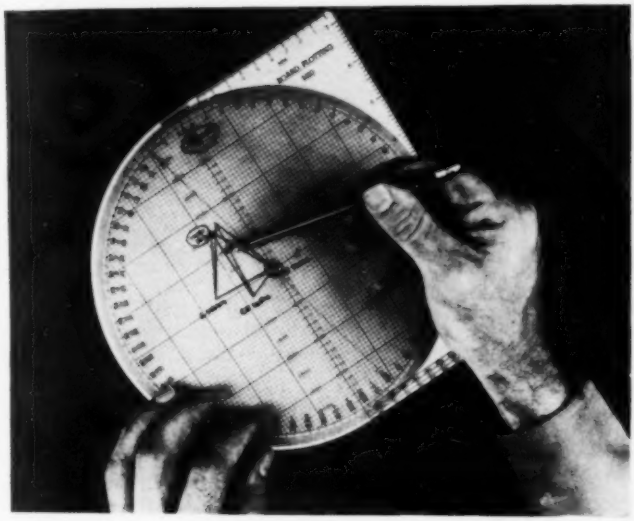


Figure 8. The M-10 plotting board is used to plot magnetic azimuth and range to enemy weapons.

The same team also uses its recorder to measure the difference in time between the arrival of the sound at each microphone. This gives the direction to the sound source, and is called *sound direction finding.*

Sound direction finding from two teams, or a combination of sound ranging and sound direction finding from only one team, are called *sound locating.* Each team has a plastic instrument called a computer. The computer con-

verts the time differences—which are in microseconds—into a magnetic azimuth.

The recorder is simply an electronic measuring device that furnishes the data to be converted into a magnetic azimuth by the computer. The recorder works like the wire recorders that are becoming so familiar. However, it receives sounds from three microphones instead of one. And it has a built-in electronic device to measure on tape the exact distance between sharply defined sounds.

Both teams must be certain that they have recorded the *same sound* in order to make the two magnetic azimuths intersect at the enemy weapon location. For this reason, the chief operator at the control team can stop both recorders simultaneously by pressing a remote control button on his own recorder. This traps the same sound on both recorders. If the chief operator does not stop the recorders within two seconds after he hears a sound, a magnetic device erases the sound. This prevents the continuous steel tape from becoming cluttered with numerous sounds that would make it impossible to measure a single recording.

Corporal Riley stuck his head cautiously above the rim of his foxhole. "Say, Ben," he called, "what do those disk jockeys have to sit down right here for—right up front with us?"

Sergeant Ben Tinker replied, "They say they have to select their positions just right. Usually the counterfire platoon leader tells them just where to go. They have to be pretty high, near the top of a hill—like we are—and away from trees and uneven ground . . . ."

Trees and uneven ground may cause echoes which interfere with clear, sharp recordings on the tape. Because the chief operator has to hear the enemy weapon in order to stop at the right time, the closer they are to the enemy, the better they operate. Most of the enemy's close supporting weapons are normally within 2,000 yards of our troops.

"I'll say they're close!" Riley hugged the ground near Tinker's hole as another shell exploded close-by. "Must be behind some trees or in defilade. I couldn't see the flash."

The beauty of the "contraption," as Riley called it, is that it works at night just as well as in daytime. Although it was dark now, and the enemy weapon was probably in defilade where its flash could not be seen, the sound locating team could get a finding on it.

And apparently they did get a finding on it. And reported it. Tinker and Riley heard our counterfire going overhead, heard the distant explosion that destroyed the enemy mortar. There was no answering fire.

Tinker and Riley settled back in their holes. Before Tinker went to sleep, he thought, *I'd like to know more about that gadget.*

SUMMARY

This article has done little more than cover the highlights of the Sound Locating Set, GR-6. It has shown you what it is capable of doing for the infantry, but details of its technique and employment have been excluded here. If, like Tinker, you'd like to know more about "this gadget," be on the look-out for the new FM 7-25, Headquarters Company, Infantry Regiment, to be published and distributed in the near future.

***BAR Working Models*, by Capt Frederick H. Black, Jr. and SFC Coates Brown. The first of a series of articles showing detailed constructional drawings of the small arms working models used at The Infantry School. Starts in the July 1950 QUARTERLY.**

Tank Gunnery Subcaliber Qualification

Compiled by Major J. S. Sandiland, Infantry

Now that tanks are part of the infantry—a tank company in each regiment and a tank battalion in the division—many of us will need a knowledge of tank gunnery training.

It may be that you have already studied the gunnery training peculiar to tank-mounted weapons. In your research you saw the Qualification Courses *A* and *B* published as Change 3, dated 17 January 1947, to FM 23-100. You saw that each tank crewman must qualify in Course *B* (subcaliber) before he is eligible to fire Course *A* (service firing). This article presents some ideas for making Course *B* smoother, more efficient, and time-saving.

Subcaliber qualification has two distinct phases: The Gunner's Preliminary Examination and The Firing Examination. The preliminary portion is, again, divided into two parts—The Material Examination and The Simulated Firing Examination. Both must be successfully completed before the soldier starts the firing portion of the course.

In one part of the Material Examination the man being tested has to identify ammunition for all weapons on the tank—including hand weapons—by the color, size, and shape of the rounds. Defects have been set up in these rounds and, as part of the exercise, the soldier tells the testing officer what would result if the defective rounds were loaded into their respective weapons.

Post regulations usually state how ammunition—particularly major caliber ammunition—will be handled and stored. Using live rounds outside a magazine or range area is almost always prohibited. This makes it quite difficult to find a time and place for the test. And further, since

major caliber ammunition allowances are rigidly restricted, it is neither feasible nor economical to deface a number of rounds each time the test is given.

A solution to the problem is this: 90-mm ammunition is of fairly simple construction and, upon request, ordnance technicians or bomb-disposal personnel will usually disarm a number of rounds. Although these technicians may hesitate to disarm white phosphorous ammunition because the filler is volatile in air, we can overcome this difficulty by remembering that the white phosphorous and the high-explosive projectiles are exactly the same except for the fuze and color. And so, by disarming two high-explosive rounds and painting one the characteristic blue-gray of white phosphorous with the correct markings, we have what we need for instruction use.

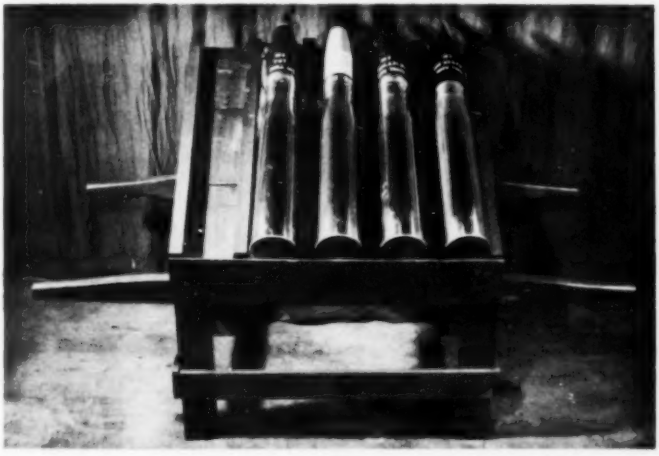


Figure 1. 90-mm Dummy Ammunition Display Rack

In this manner we can obtain a complete set of dummy ammunition—High Explosive, White Phosphorous, Armor Piercing Capped, and Hyper Velocity Armor Piercing—simply by fitting easily-procured brass cases to the disarmed projectiles. This dummy ammunition can be used freely in class rooms or barracks and, if polished, makes

an attractive display. A rack of scrap lumber (see Figure 1) makes it easy to carry and display the rounds. When not in use, the rounds can be stored in their original fiber containers.

Another part of the Gunner's Preliminary Examination requires the soldier to make an end-for-end test on an M1 Quadrant that is out of adjustment. For some reason this test, which is simplicity itself, is difficult to teach. It may be that having to work on a gun in a crowded tank turret accounts for the difficulty students have in grasping the

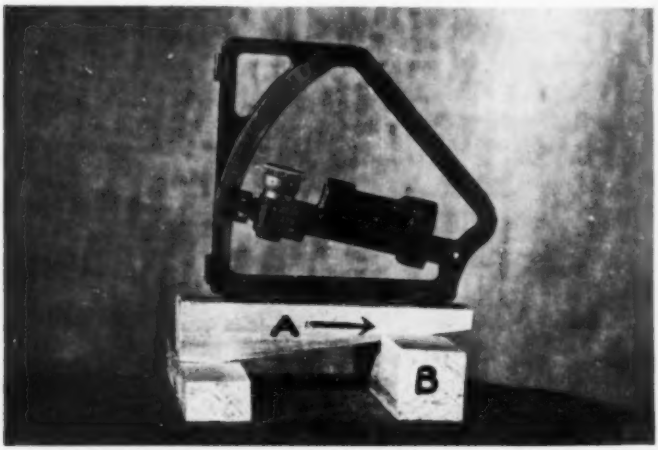


Figure 2. Wooden Testing Device for Gunner's Quadrant

principle. A solution is this: make a training aid (see Figure 2) of salvage lumber, with which you can teach the use of the quadrant and the end-for-end test to any number of students in a class room.

If we let *A* simulate the tube of the weapon with the direction of fire shown by an arrow, we can get any desired angle of elevation by moving block *B* forward or back. In teaching the end-for-end test, you can set up any desired error by placing a piece of adhesive tape on one of the quadrant shoes before the quadrant is placed on its seats.

(The tape throws the quadrant out of adjustment and holds the error.)

Figure 3 shows a sample score sheet, which can be printed or mimeographed. It simplifies the problem of keeping individual records for the men being tested in the material and simulated firing examinations. These sheets are carried by the men through the various tests and the results can quickly be transferred to a master score sheet to determine final qualification.

When the soldier has successfully completed the preliminary gunner's examination, he continues toward qualification by firing the prescribed range course. Range firing with tanks presents many safety and control problems that are not encountered with other infantry weapons. For example, the weapon is fired from within a tank and neither the weapon or the gunner is visible to the range control officer. Thus it is easy to visualize how vital are safety and control when a number of tanks are firing.

The Infantry School has experimented over a five year period with different range layouts and control methods for a tank subcaliber firing range. Following is a system evolved by the School that combines a maximum number of firing units with a minimum of space, and gives the range control officer a maximum of control and safety.

Figure 4* shows a range laid out for the firing of 13 tanks simultaneously. On the right of the firing line ten tanks fire the qualification course moving-target table. The runway for the radio-controlled target tank is shown parallel to the firing line and 500 yards distant. Note that the turn-arounds on either end of the runway are outside the firing limits, which are designated by poles with cross-arms.

These same ten tanks, without shifting position, fire the manipulation and fire adjustment exercise on the targets shown in the foreground (Targets 1-10). In this same sector and forward of the firing line are simulated range

*EDITOR'S NOTE: Dimensions and construction data for the various targets can be found in FM 23-100.

Student's Name .....

PASSING? YES.....NO.....EXAM. OFF. INIT.....

GUNNER'S PRELIMINARY EXAM.

(Possible: 90-mm --- 330)

(Minimum before firing Qualification Course: 90-mm --- 265)

	Poss.	Credit	Examining Officers Initials
1. MATERIAL EXAMINATION (Deduct 1 minute from time allowed if test is conducted on dismounted gun)	150		
a. Disassembly of Breech Mechanism, 90-mm—4 minutes	20		
b. Assembly of Breech Mechanism, 90-mm—6 minutes	20		
c. Care and Maintenance (Less 4 points for following errors)			
(1) Each point of lubrication missed.			
(2) Each error in selection of lubricating device or lubricant.			
(3) Each error in procedure for filling recoil system.	20		
d. Sight Adjustment (Total possible—50)			
(1) Co-axial telescope	30		
(2) Periscope	20		
e. Putting Power Traverse in Operation (Less 5 points for each error)	10		
f. Testing Gunner's Quadrant (Less 5 points for each error)	10		
g. Adjusting Elevation Quadrant (Less 5 points for each error)	10		
h. Identification and Inspection of Ammunition (Less 2 points for each error)	10		
TOTAL	150		
2. SIMULATED FIRING EXAMINATION	180		
a. Direct laying. 5 seconds per trial			
Initial setting	10		
2d setting	10		
3d setting	10		
4th setting	10		
b. Adjustment using Azimuth Indicator and Graduated Elevating Handwheel, 6 seconds per trial.			
Initial setting	10		
2d setting	10		
3d setting	10		
4th setting	10		
c. Use of the Elevation Quadrant. 9 seconds per trial			
Initial setting	10		
2d setting	10		
3d setting	10		
d. Use of Gunner's Quadrant. 7 seconds per trial			
Initial setting	10		
2d setting	10		
3d setting	10		
e. Adjustment Using Azimuth Indicator and Elevation Quadrant M9. 32 seconds per trial			
Initial setting	10		
2d setting	10		
3d setting	10		
4th setting	10		
TOTAL	180		
GRAND TOTAL	330		

Figure 3. Score Sheet for Gunner's Preliminary Examination

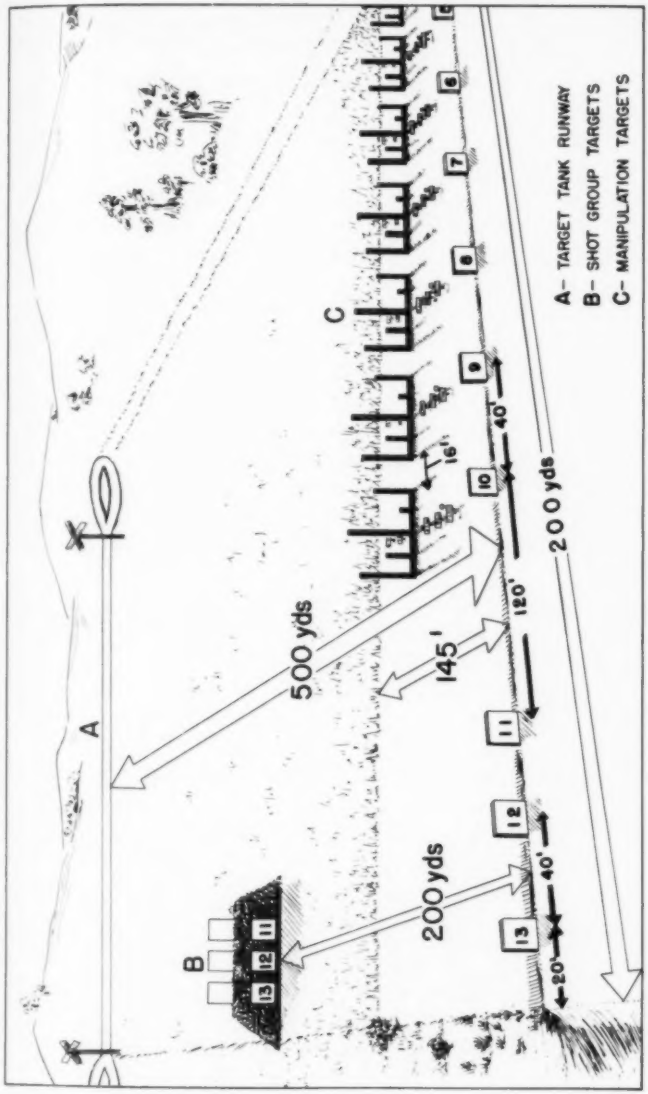


Figure 4. Layout for Subcaliber Range

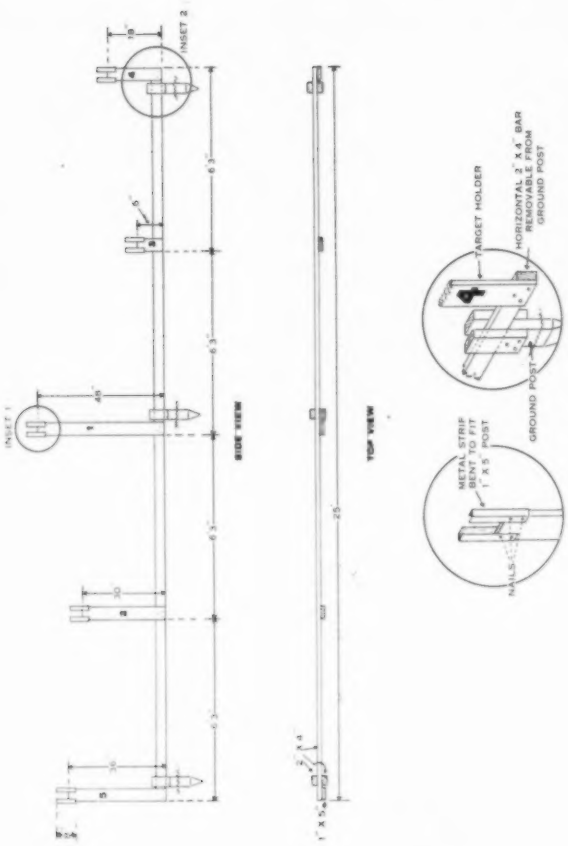


Figure 5. Construction Drawing-Manipulation Target. This drawing not to scale

markers for the fire adjustment table. (Refer to Figure 4.) These are permanently emplaced and do not interfere with the manipulation exercise. Figure 5 shows the construction of the manipulation target frames and how they are emplaced and removed.

Tanks 11-13 (Figure 4) fire the shot-group exercise (Targets 11-13). Tank 11 is emplaced on the firing line at least 120 feet from tank 10—an arrangement that allows personnel to change pasters in the manipulation target frames without causing the shot-group tanks (Nos. 11, 12, and 13) to cease fire. The shot-group targets are standard rifle targets and frames behind permanent-type butts. They are operated by a pit detail of one noncommissioned officer and three men, and scoring information is sent to the firing line by telephone.

To operate a range with this setup requires two control officers and a trained enlisted assistant on each tank. Thirteen tanks firing simultaneously allows a tank company to complete record practice in less than eight hours. The physical layout can be expanded or cut to meet local needs.

With the range laid out and the tanks emplaced as shown in Figure 4, the officer in charge of the group of 10 tanks can control the firing by either of two means. He can use a portable public address system, or he can use the tank radio net. When radio is used, control is exercised from a command tank and one crew member in each tank keeps his head phones on at all times. The auxiliary motor for the generator is run periodically so that the batteries will not be exhausted by continuous use of the radio and intermittent use of power traverse.

SAFETY PRECAUTIONS

Safety precautions are few, but are effective only if every person on the range knows them well. Each firing tank is equipped with two flags, one red, the other green (from the tank's T/E), which are kept on top of the turret. There is also a standard machine gun clearing block

for each co-axial machine gun. The man acting as tank commander checks that:

a. When the *green flag is displayed*:

1. The co-axial machine gun is clear, its cover raised.
2. The wooden clearing block is in the breech.
3. The firing switch is on "OFF."

b. When the *red flag is displayed*:

1. The firing switch is "ON."
2. The clearing block is out of the machine gun.
3. The cover is down, the gun loaded.

Everyone on the range is cautioned not to go forward of the line of turret hatch openings without permission from the officer in charge of firing. This permission is not granted until all tanks have displayed a green flag and each gunner has raised to maximum elevation the tube of the main guns on his tank. If one of the co-axial machine guns should be fired accidentally while the tubes are elevated, the trajectory would be over the men in front of the tanks.

A final precaution is: No smoking within 25 yards of any tank.

PRELIMINARY WORK

A great deal of time will be saved if crewmen go through the following procedure before the men to be tested arrive on the range:

a. Bore sight the co-axial machine gun with both the gunner's periscope and telescope sights.

b. Check bore sight of the telescope by registration firing at the target tank, which can be pulled out on the runway 500 yards from the firing line. The telescope is then used for qualification firing at the moving target only.

c. Check bore sight of the gunner's periscope sight by firing for registration on paster Number 5 of the manipulation exercise panel. It is often necessary to use an aiming point on the sight reticle, since the adjustment knobs may not allow the bore sight cross to move onto the center of paster Number 5, The man registering the periscope

draws on a slip of paper, or with chalk on the turret wall, the sight picture used to hit the center of paster Number 5. The periscope is then used for record firing on the manipulation exercise only, and each tested person is shown the sight picture to use.

d. A small stake marked *RP* (Reference Point) is driven in the ground near the simulated 1500 yard range marker on the fire adjustment trainer. The gun is registered to hit the ground at the base of the *RP* stake, and notation is made of the quadrant elevation and azimuth indicator reading necessary to hit this point. Then during the qualification firing, the gunner lays back on the *RP* after each student completes a problem. The initial fire command by the students contains the direction element "FROM REFERENCE POINT RIGHT (LEFT).....MILS," instead of the regulation direction element of *"Traverse Right, Steady, On."* The mil deflection from the *RP* to any target can be read directly from the reticle of field glasses.

So that each student firing for qualification is graded the same on the fire adjustment exercise—and so that standard cuts are made for errors—a card like that shown in Figure 6 is given the assistant on each tank for grading this exercise.

A mimeographed or printed score sheet like the one in Figure 7 is used to keep individual records of firing. The scores are recorded on a master sheet and totaled to determine final qualification.

Qualification firing is done by shooting single shots from the co-axial machine gun. But, since the gunner fires with the electrical firing button on the power traversing control panel, he is unable to trigger off single shots. To do so usually means that ammunition belts must be hand-loaded with alternate ball and dummy cartridges, and it requires that a crew member inside the tank hand-operate the bolt after every round fired by the gunner. This is completely unsatisfactory from the standpoint of wasted man hours. And further, the use of dummy rounds results in an excessive number of stoppages and alibi runs—a waste of range time. Finally, hand operation of the machine gun

PROCEDURE FOR FIRING TABLE IV (FIRE ADJUSTMENT)

a. Have gunner fire on RP; zero Azimuth Indicator and level bubble on M9 Quadrant.

b. Point out target to crew commander, and identify. i.e., MG, house, tank, etc.

c. Have crew commander give complete fire command to adjust on target.

d. Check to see that the gunner knows how many clicks on the elevating hand wheel equals 100 yds range change. (5 mils per 100 yds.)

e. Initial range change for the 90mm Gun (400 yds).

f. Initial range change for the 105mm How. 1000 yds to 2000 yds, at least 200 yds. 2000 yds ....., at least 400 yds.

INITIAL FIRE COMMAND

1. GUNNER
2. FIRE MISSION
3. HE
4. REFERENCE POINT (RIGHT – LEFT) .....
5. MACHINE GUN
6. ONE TWO HUNDRED
7. FIRE

SUBSEQUENT

1. (RIGHT – LEFT) .....
2. (ADD – DROP) .....
3. FIRE

TERMINATION OF ALERT

1. CEASE FIRING – END OF MISSION

Figure 6. Assistant Instructor's Check List

RECORD

(ALL ENTRIES ON THIS PAGE TO BE MADE IN INK)

GUNNERY QUALIFICATION COURSE "B"

POINT VALUE _____ POINTS

TABLE I—MANIPULATION EXERCISE, 1000" (POSSIBLE 60)
(ONE HIT PENALTY FOR EACH ROUND FIRED AFTER "CEASE FIRING")

TRIALS	NO. OF RDS.	TIME IN SEC.	NO. OF HITS	SCORE 3 PTS. PER HIT	TOTAL SCORE	EXAM. OFF. INIT.
Manual Traverse						
First Trial	5	25				
Second Trial	5	25				
Power Traverse						
Third Trial	5	25				
Fourth Trial	5	25				

TABLE II—SHOT GROUP EXERCISE, FIELD RANGE (POSSIBLE 60)
(10 ROUNDS ALLOWED FOR ZEROING—NO TIME LIMIT)

No. of Rounds	No. of Hits	Score, 4 Pts/hit	Exam. Off. Initial
15			

TABLE III—MOVING TARGET EXERCISE, FIELD RANGE (POSSIBLE 120)
(ROUNDS FIRED AFTER "CEASE FIRING" ARE SCORED AS MISSES)

TRIALS	NO. OF RDS.	TIME IN SEC.	NO. OF HITS	SCORE 4 PTS. PER HIT	TOTAL SCORE	EXAM. OFF. INIT.
Manual Traverse						
First Trial, 5 MPH	5	50				
Second Trial, 8 MPH	5	25				
Third Trial, 15 MPH	5+	18				
Power Traverse						
Fourth Trial, 5 MPH	5	50				
Fifth Trial, 8 MPH	5	25				
Sixth Trial, 15 MPH	5+	18				

TABLE IV—FIRE ADJUSTMENT (POSSIBLE 60)
(Deduct 2 points for each error in the following: a. Content and sequence of initial fire command: b. Sensings and subsequent fire commands; c. If definite sensing is not obtained by third round on each target.—No time limit.)

5 POINTS PER CORRECT SENSING AND SUBSEQUENT COMMAND												TOTAL SCORE	EXAM. OFF. INIT.
1	2	3	4	5	6	7	8	9	10	11	12		

AGGREGATE SCORE, RECORD FIRING _____

CLASSIFIED AS _____ GUNNER
(EXP., 1ST CLASS, 2D CLASS, UNQUAL)

Score	
Expert Gunner	270
1st Class	240
2d Class	210

CERTIFIED CORRECT

.....
(NAME) (RANK) (BRANCH)

(ALL ENTRIES ON THIS PAGE TO BE MADE IN INK)

Roster No...... **Name**..... **Rank**.....
(LAST) (FIRST) (INITIAL)

Figure 7. Qualification Score Card

bolt often jeopardizes the qualification score of the man being tested by throwing the gun out of bore sight.

To allow full-loaded ball cartridge belts to be used for qualification firing, The Infantry School has perfected a device which fits on the co-axial machine gun and permits the gunner to fire single shots. The mechanism is shown in Figure 8. It is made of 1020 mild steel and can be constructed by any machine shop from the drawing shown in Figure 9. The device does not call for any modification of the gun or mount.

The cost of these time saving methods and devices is slight. The time saved is enormous. They are well worth the consideration of the infantry regiment or division faced with the new problem of training tank crews.

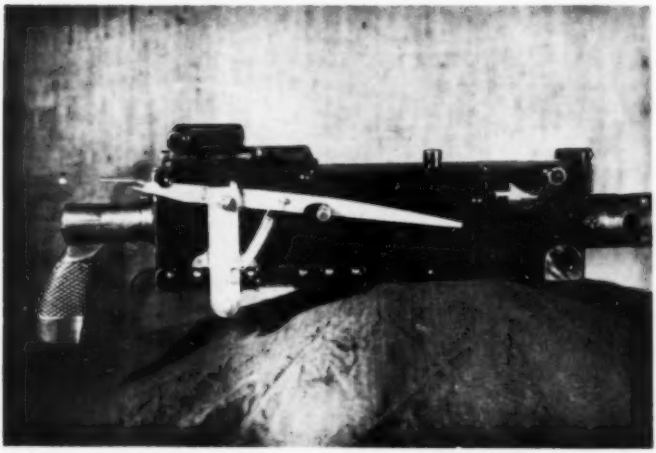


Figure 8. Single Shot Device

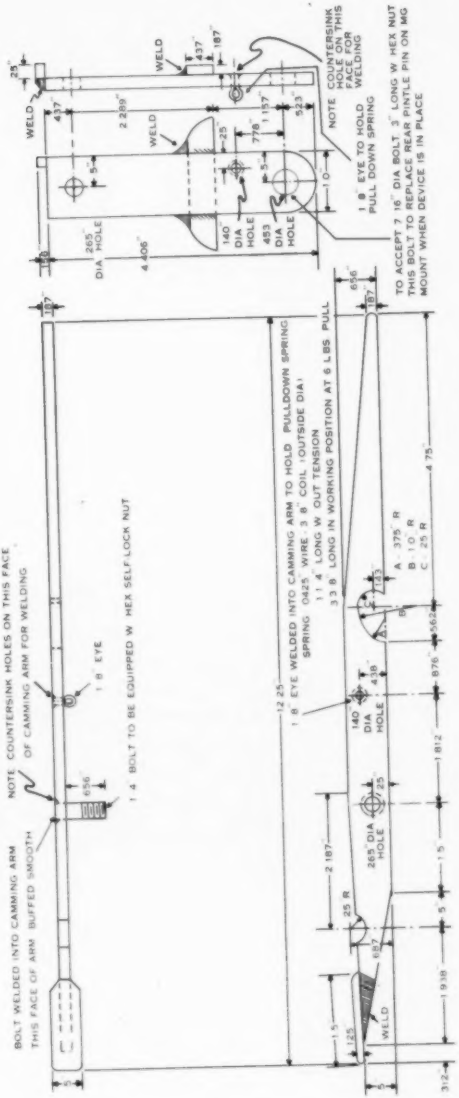
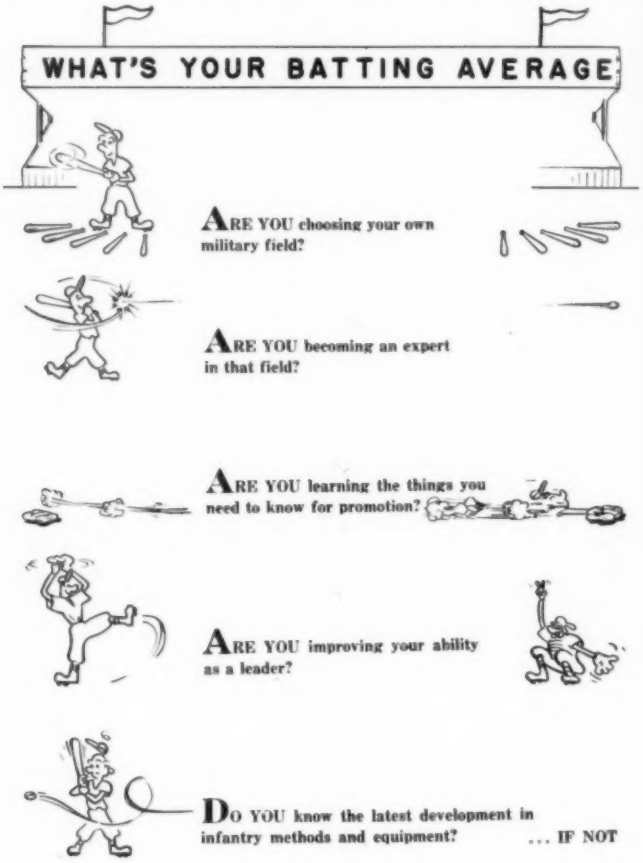


Figure 9. Construction Drawing—Single Shot Device. This drawing not to scale

Infantry School Enlisted Courses

If you're one of the Army's enlisted professionals, you've probably done considerable thinking about what you'll be doing a year—five years from now. You've wondered where you'll stand on your career ladder—how near the top you'll be. Let's translate your thinking into baseball language. How do you stack up in the terms of the following cartoon?


WHAT'S YOUR BATTING AVERAGE
ARE YOU choosing your own military field?
ARE YOU becoming an expert in that field?
ARE YOU learning the things you need to know for promotion?
ARE YOU improving your ability as a leader?
DO YOU know the latest development in infantry methods and equipment? ... IF NOT

. . . . Here's How!

Success in the Army, as in a baseball game, depends on several things. Some of these things depend on you—your willingness to work, your loyalty and honesty, and your ability to get along with other people.

Besides these basic requirements for success, you need certain other skills and abilities. You acquire skill in baseball by constant practice, under expert coaching, with good equipment. To advance in the service, you need certain skills and abilities that you'll acquire only in the Army.

Chances are that one of these days you'll have an opportunity to attend an Army service school. This is true if you're Regular Army, National Guard, or Organized Reserve. This article lists the courses that The Infantry School offers to enlisted men of all components who are anxious to learn more about the business of soldiering and how to get ahead in it.

The Army wants you to advance, for when you get a promotion, it's a sign that you're better able to do your job—a job the Army needs done.

Here you'll find listed the very courses you need to improve your chances of earning a promotion. If you want that course, here's how to go about getting it:

Tell your first sergeant and company commander what course you'd like to attend. Explain your qualifications for the course and why you think that you, your unit, and the Army will profit from your attending. If you meet the qualifications your C. O. will request a quota so that you may attend The Infantry School soon.

You will return to your unit when the course is over unless you attend the Basic Airborne Course from a non-airborne unit.

This is guaranteed by Army regulations. For a course shorter than five months, you will not be transferred from your outfit, but attached to The Infantry School. When the course is over, you must be returned to your unit.

If you're gone for longer than five months, you will still be returned if your organization asks for you.

This regulation assures your company commander that

he won't lose the good men he sends to school. It assures you that when your course is over you won't have to start from scratch in a new outfit with a bunch of strangers.

If you're really interested in weapons, or radios and telephones, in auto mechanics, or airborne training, don't put this book down until you've found out all about how you may start a new phase of your military career at

The Home Of The Infantry

Fort Benning, Georgia, home of The Infantry School, is the largest infantry and airborne training center in the world.

During World War II the post grew to over 220,000 acres in Georgia and Alabama. At times more than 100,000 troops called it home; 191,000 students (most of them infantrymen) completed its courses; Benning-acquired skills and techniques helped win Allied victories on all battle fronts of World War II.

Often referred to as the Army's most complete post, Fort Benning is now the home of 26,000 army and air force troops. Included in this number are the students and permanently assigned cadre of The Infantry School, members of Army Field Force tactical and test units stationed on the post, and the airmen of Lawson Air Force Base.

Figure 2. A regimental review on Stilwell Field before the massive Fort Benning Cuartels. To many a soldier this sight symbolizes the infantry and Fort Benning.

Swimming, tennis, golf, bowling, fishing, hunting, skeet shooting and all types of team sports are open to all troops on the post.

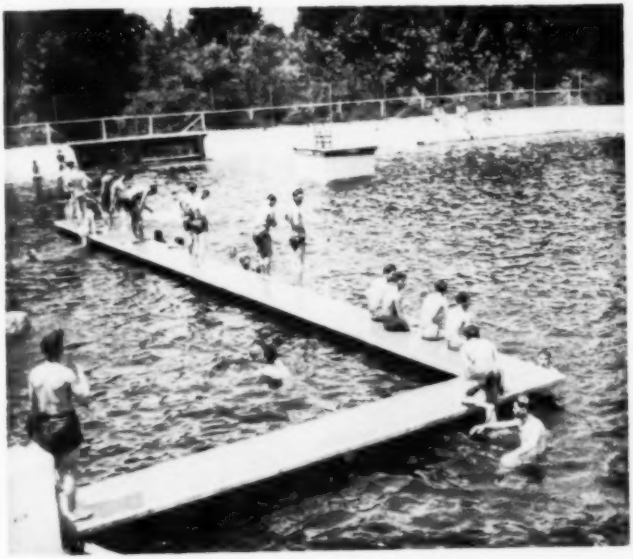


Figure 3. During the long swimming season, Russ Pool on the Main Post is a favorite recreation spot for enlisted men and their guests.

When you come to The Infantry School, you'll find that all the recreational and self-improvement facilities of the post and community are open to you; they will contribute to your enjoyment of off-duty hours while you're learning a military specialty.

Infantry Noncommissioned Officers' Weapons Course

Weapons men in both the light and heavy career fields are trained by The Infantry School's noncommissioned officers' weapons course. The 15 week course qualifies carefully selected NCO's as either Infantry Heavy Weapons Leaders, MOS 2812, or as Infantry Light Weapons Leaders, MOS 2745.

In the 15 weeks that the course runs you learn weapons techniques and doctrine, plus getting a basic course in tactics, communication, leadership, map and aerial photograph reading, motor maintenance, training management, and modern instructional methods.

The whole staff of The Infantry School helps to put the NCO weapons course over. The same instructors that teach the officers' basic and advanced classes teach you. The same equipment and many of the same illustrative problems are also used. It is a thorough, professional course for a select group of professional men.

And while you're a student in The Infantry School's noncommissioned officers' weapons course, you have but one job; that one job is to learn the things that will put you ahead in your career.

Figure 4. As a student in the infantry weapons NCO course you handle the fire power of these — the heaviest infantry weapons.

Heavy weapons—the Infantry's Sunday punch—machine guns, mortars, recoilless rifles, and tank weapons—give modern infantry units tremendous fire power and shock effect. To place and direct this fire effectively, the infantry needs skilled men—Infantry Heavy Weapons Leaders in the new career MOS 2812.

Post-war developments that have enormously increased the infantry division's fire power emphasize the ever-growing importance of the proper handling of crew-served heavy weapons.

The Army school quotas to your unit are based largely on the number of men that request school training.

Figure 5. The jeep-mounted 75-mm recoilless rifle combines the punch of light artillery with the mobility of the jeep. The army needs trained weapons leaders to use it.

If you want the opportunity afforded by this training, apply now through your commanding officer.

Light weapons offer career opportunities. If you're an infantryman, armed with a light hand weapon, you're the man that all the rest of the army, from high headquarters down, is organized to support. For you're the man that takes and holds ground, defeats the enemy, and wins wars.

Supporting weapons and services are important in modern warfare because they help you do your job.

Figure 6. In the NCO weapons course you learn all about machine guns — how they work, how to use them defensively, and how to use them to support attacking infantry.

Leading the rifle squads and platoons and directing the fire of light infantry weapons is a job which is second to none in importance in the American Army. If you can measure up to the challenge of this job and want to be an infantry light weapons leader this course will interest you. It trains carefully selected NCO's for the Light Infantry Weapons career field, MOS 2745.

The next move is yours! Apply today and help yourself up the infantry career ladder.

Enlisted Motor Course

Mechanics learn by doing. This course trains the mechanics and motor sergeants—the men who keep the infantry's wheels rolling. The graduate of this 16-weeks course of practical instruction is qualified for assignment as an Automotive Mechanic, MOS 014.

If you are mechanically inclined and want to learn a specialty—a specialty for which there is always a demand, both in the service and in civilian life—this course is designed for you.

Most of the instruction is supervised practical work. One assistant instructor works with every four students, answers questions, and sees that you don't miss anything. You learn the material under nearly ideal conditions, using large, functioning models of all units and systems.

Figure 7. It isn't black magic, but the sniperscope uses black light to let you see and shoot at night. This is one of the newer weapons which you'll learn to use while a student in the NCO weapons course.

Here are some of the subjects you study in the course:

Use of hand tools, theory of internal combustion engines, automobile electrical system, trouble shooting, the power train system, wheels and brakes, auto and truck chassis, welding and painting, motor marches, preventive maintenance, motor pool administration, driver selection and training, and air transportability.

These are the qualifications which make you eligible for this course:

A minimum aptitude area score of 100.

An automotive information test score of at least 100.

An Army or state driver's license.

Seventh graders normally are not eligible for the course, but under special conditions even this restriction may be waived.

Figure 8. In the chassis group, you'll learn on cutaway models of all military vehicles. Here students are installing a front spring on a ¾-ton truck.

Figure 9. Field expedients, or the art of getting a job done with little equipment, are also taught. You learn that elaborate hoists aren't needed if you have a log "A" frame and a truck with a winch.

If you want to prepare yourself to advance and to do a better job for the Army and your unit, see your first sergeant. Get on your organization's next quota for The Infantry School's enlisted motor course.

Communication Chiefs' Course

Communication carries the voice of command. Communication is the vital nerve system that links thought and word into team action. Upon it rests the commander's ability to use the power in his organization when and where it is most needed.

Figure 10. The message center coordinates the use of radio, wire, and messenger communication. You'll learn how to direct a message center while studying to be a communication chief.

Communication within the squad is generally by voice and arm-and-hand signal, but in most larger units, trained communication men with special equipment do the job. In the infantry it's the communication chiefs who train and direct the radio operators, the wire men and switchboard operators, the code clerks, and the messengers.

A 20-week course at The Infantry School—the communication chief's course—is designed for present and future chiefs. It offers training in the characteristics, installation, operation, and maintenance of infantry and airborne communication systems.

Technical communication subjects taught in this course include wire communication, message center procedure and cryptography, code, radio operation, sets, fundamentals, and equipment, electrical fundamentals, and communication systems.

Subjects in fields other than communication include leadership, map and aerial photograph reading, methods of instruction and training management, organization, combat supply, and medical field service.

The course is open to all men in grade E3 or higher who have an aptitude area IX score of 100 or better and who desire to attend. It qualifies its graduates for MOS 542, Communication Chief. You don't have to be a high school graduate to qualify, but your chances will be helped if you have equivalent education and hold or are likely to hold an assignment as a leader of infantry communication men.

If you can measure up and are interested in qualifying yourself for one of the most fascinating noncommissioned officer assignments in the infantry, see your first sergeant. Do it now!

Infantry Radio Repair Course

Radio repairman's training is thorough and practical. Every development which makes our Army a faster moving, harder hitting, more mobile force increases the need for radio communication. Every platoon in the infantry, as well as many squads and sections, uses radio to control movements, get information, and send orders.

Larger units, also, depend on radio communication; without it, fast-moving offensive thrusts, airborne operations, amphibious landings, and combined operations in which the Army, Navy, and Air Force take part would hardly be possible.

As the Army uses more and more radios the radio repairman becomes a more and more important specialist, for he keeps the radios ready to operate when they'll be most needed. He is a vitally important member of the military team.

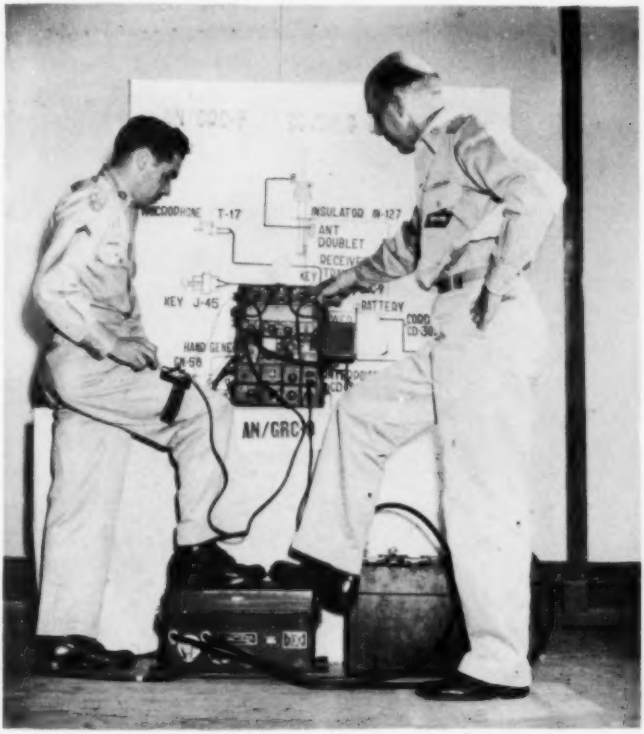


Figure 11. Not all chiefs' course work is in the field. You learn to operate all infantry radios so that when you graduate and are assigned to a unit you will be able to train and supervise the operators.

You don't have to be a radio specialist to become a repairman, provided you're interested and have certain qualifications. The Infantry School's radio repair course takes selected men and in 20½ weeks qualifies them as Radio Repair-

men, MOS 648, able to maintain and repair all infantry radio sets.

In the infantry radio repair course, you'll receive training that would cost a civilian hundreds of dollars. Experienced, practical instructors—men who know just what is easy and hard for you to learn—do the teaching. In practical lab exercises, you demonstrate the principles you have learned and develop skill in handling equipment.

Figure 12. If you're an amateur radio operator, or want to learn to be one, you'll have a chance during off-duty hours at The Infantry School's short-wave station, W4TIS.

If you can meet the course requirements and want to learn more about a field which every day becomes more important, both within and outside the army, this course can provide the knowhow for the next forward step in your career.

To advance in the Army, you need additional knowledge and skills. The fastest and easiest way to get these skills and knowledge is through attending Army schools. They will help to qualify you to advance to that higher grade.

To be eligible for this course you must:

Have normal color vision; make at least 110 on the area IX aptitude score; and really want to attend the course.

You can apply for the course through your orderly room.

Basic Airborne Course

Extra pay for duty with airborne units. Do you want exciting service in a new and growing field? Do you want to be a member of a high-spirited, all-volunteer unit? Can you measure up to the high physical standards required of the airborne soldier? If you answer these questions with a YES, volunteer for airborne duty and the basic airborne course at The Infantry School.

The Infantry School trains airborne soldiers for all the branches and services that are found in the airborne division. The fact that you may not be an infantryman dosen't bar you, for the airborne divisions also need both field and antiaircraft artillerymen, engineers, medics, quartermaster, ordnance men, MP's, bandsmen, and signal men, as well as men qualified for duty with chemical, special service, adjutant general, judge advocate, and inspector general sections.

To be eligible, you must be enlisted for at least three years, have completed basic training, be no older than 31, and pass a rigid physical examination.

Not until toward the end of World War II were mass airborne armies dropped from the skies by parachute and glider to seize and hold objectives deep within enemy territory. Now airborne units are a part of every modern army, and to serve with such a unit in our Army, you must be superior in physical stamina, mental alertness, and desire for exciting and interesting service. For that service you get $50 a month in extra pay.

If you volunteer for airborne duty, you will be trained in The Infantry School's basic airborne course, which in five

weeks will qualify you to use the parachute, glider, and transport plane as a means of transportation.

When you finish the course you'll be awarded the paratrooper's silver wings and be assigned to an outstanding army airborne unit.

Pathfinder Course

Pathfinders blaze trails in the sky. Pathfinders precede airborne and air-transported task forces into the battle zones. They reach the area by parachute, glider, or plane from a few minutes to several days ahead of the main body. Once

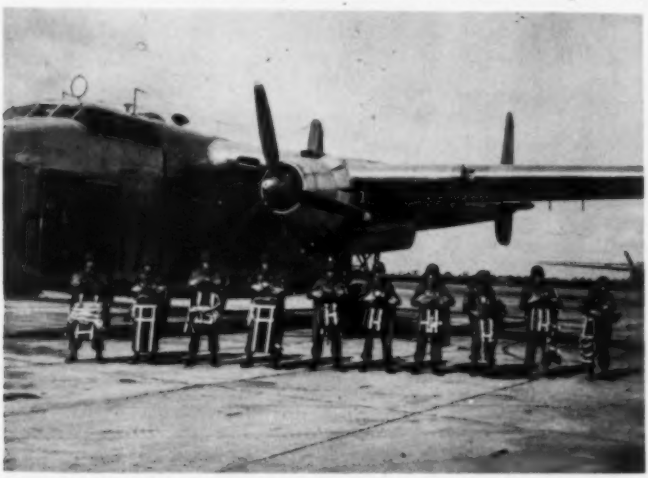


Figure 13. Pathfinders, carrying their navigation and communication equipment, prepare to lead their outfit on a jump exercise.

there, the pathfinders' job is to establish communication with the troop carrier planes and help guide them to the proper drop or landing zone, to help glider and parachute troops assemble after landing, to locate and survey proposed forward landing strips, and to guide air landing units to these strips.

Success or failure of an entire airborne or air-transported operation may well depend on the technical skill and soldierly abilities of two or four small pathfinder teams. For that reason, duty of this sort requires men of superior initiative

and ability. Only volunteers are assigned to it, and those who are accepted are thoroughly trained, aggressive soldiers who want to learn pathfinding techniques and can master the communication equipment used.

If you want to be a pathfinder, remember that *interest, adaptability, physical fitness, and mental alertness are the main prerequisites for the 12-week pathfinder course at The Infantry School.* When you finish the course you return to your organization. You need not be a parachutist to be

Figure 14. The jump completed, this pathfinder already has his radio in operation to guide oncoming troop carrier planes.

eligible, nor need you be assigned to an airborne unit, but you must be willing to make frequent aerial flights during training.

Quotas for attendance at this course are based on applications. If you're interested, get your application in now.

Parachute Rigger Course

The rigger's pledge guides his work. Parachute riggers are the men who pack, inspect, maintain and repair the parachutes, and other equipment used in the aerial delivery of men and equipment.

A rigger is a skilled parachute packer. He knows the technique of supply and resupply by air, and how to use and repair sewing machines. The most important single quality he must have, though, is one that can't be measured in terms of aptitude scores or previous experience.

That quality is devotion to duty, for on the rigger and the care and skill with which he does his job depend the lives of all the men who jump the chutes he packs.

Figure 15. As a rigger, you'll learn to inspect parachutes and to repair or replace any worn or defective parts.

Recognizing this, all Army riggers back up their work by pledging to jump any parachute which they have packed and certified as correct.

The parachute rigger course at The Infantry School trains selected men for the parachute maintenance companies of the airborne divisions. *If you are on airborne status, have a minimum AGCT score of 100, have a demonstrated aptitude*

and ability for this work, and, above all, are absolutely reliable, you may be able to qualify for this six-week course. On becoming parachute rigger, you will join an elite group of military specialists whose daily code is expressed by the Rigger's Pledge.

THE RIGGER'S PLEDGE

I WILL keep constantly in mind that until men grow wings their parachutes must be dependable.

I WILL pack every parachute as though I am to jump with it myself, and will stand ready to jump with any parachute which I have certified as properly inspected and packed.

I WILL remember always that the other man's life is as dear to him as mine is to me.

I WILL never resort to guesswork, as I know that chance is a fool's god and that I, a Rigger, cannot depend on it.

I WILL never pass over any defect, nor neglect any repair, no matter how small, as I know that omissions and mistakes in the rigging of a parachute may cost a life.

I WILL keep all parachute equipment entrusted to my care in the best possible condition, remembering always that little things left undone cause major troubles.

I WILL never sign my name to a parachute inspection or packing certificate unless I have personally performed or directly supervised every step, and am entirely satisfied with all the work.

I WILL never let the idea that a piece of work is "good enough" make me a potential murderer through a careless mistake or oversight, for I know there can be no compromise with perfection.

I WILL keep always a wholehearted respect for my vocation, regarding it as a high profession rather than a day-to-day task, and will keep in mind constantly my grave responsibility.

I WILL be SURE—always.

Here's What They Say

These comments of men who have taken the Infantry School Courses will give you an idea of what you can expect when you come to Fort Benning as a student.

Pathfinder: "From the course I learned a lot of technical material that will help me on my job—material that would be hard to learn while I'm doing a regular job in my company." *Pfc, 82d Airborne Division.*

Light Weapons: "The outstanding thing about the weapons course is the instruction—all the instructors really know what they're talking about and they're eager to help you learn." *Sergeant, 131st Infantry, 33d Division, Illinois National Guard.*

Infantry Radio Repair: "I expect to use what I'm learning here in the Army, and then, after I retire, in civilian life, too." *Sergeant, 38th Infantry, 2d Division.*

Enlisted Motor: "I want to get ahead. If I learn more here, I'll have a better chance at promotion. This course will help me prepare for career examinations." *Corporal, 14th Regimental Combat Team.*

Parachute Rigger Course: "The instruction was clear and thorough. I had no knowledge of airborne equipment before the course, and feel that learning it would have been harder without complete instruction." *Sergeant, 82d Airborne Division.*

Basic Airborne: "It was a tough course, and discipline was strict, sure. But I wanted to be a paratrooper and see those wings on my shirt. The noncoms that taught me were the best I have ever served with in the army." *Pfc, 11th Airborne Division.*

Communication Chiefs: "Any man who's really interested in communication work ought to take this course. I'm glad I did. I got a lot out of it and I'm now in a better position to pass an examination for promotion." *Corporal, 15th Infantry, 3d Division.*

Right now The Infantry School is training men in the courses described in this article. These men are preparing themselves for the leaders' and specialists' jobs in the

Regular Army, the National Guard and the Organized Reserve Corps.

If you have the qualifications and the will to attend, your chances of getting one of these courses is good. Quotas to all Army units are liberal, and more National Guardsmen are now attending Army service schools than ever before in Guard history.

See your squad, section, or platoon leader, your first sergeant, and your company commander. Tell them about the course you'd like to attend. They are the ones who can see that you do.

Communication Data Rule, **by Capt C. A. Martin, Jr. An article describing one of The Infantry School's effective new training aids. This one teaches communication nets and the characteristics of communication equipment in the infantry regiment. Coming—in the July 1950 issue of the QUARTERLY.**

The New Map Grid Systems

Compiled by Maj Donald D. Dunlop, Infantry

The message was brief and to the point.

"CP 1st Inf closed old location. Opened 36519276 at 030915 Apr 50."

Here's the report on the new location of a command post. The time date group seems to be in order. But wait - what about that grid coordinate? That "36519276"? That's a new way of writing coordinates, isn't it? The answer is "yes" and "no." For those of us who have worked with maps using the British grid it's old stuff—that business of omitting the parentheses, decimals, and dash. Effective immediately, we'll omit them when using other systems. That constitutes one of the items included in the recent authorization of two new grid systems by the Department of the Army.

As of 29 December 1949 the Army, Navy, and Air Force have adopted for joint use the Universal Transverse Mercator (UTM) and Universal Polar Stereographic (UPS) grid reference systems. The same systems will be used internally by the Army.

The full titles of these grid systems shouldn't bother us too much. In this age of alphabetical terminology we can assume that UTM and UPS will be the titles commonly used. Analyzing these two titles we deduce that, with the word "Universal" excepted, the titles are derived from the name of the projection used on maps. These two projections are:

1. The Transverse Mercator projection between 80° north latitude and 80° south latitude.

2. The Polar Stereographic projection for the northern and southern polar regions. In both regions this is a circular shaped area centered on the poles and having a radius of 10°.

Inasmuch as the UTM grid system will apply to all por-

tions of the earth's surface except the two polar regions, it is the one with which we shall be most concerned.

Suppose we analyze a *complete* UTM grid coordinate such as 16SFL 35216659. The "16SFL" breaks down into two bits of information—"16S" and "FL." The "16S" is a *grid-zone designation.* These grid zones are 6° in an east-west direction and 8° in a north-south direction. The "16S" tells us what *particular grid-zone* is referred to. In other words, out of an area covering practically the entire earth's surface, "16S" confines us *to one particular 6° by 8° portion of that area.* Any other such grid zone between 80° north latitude and 80° south latitude is expressed in a similar manner—a number followed by a letter. Just how the designations are determined is something for the map maker to worry about—we'll have the appropriate grid zone designation furnished on the margins of our maps.

Next we come to "FL" which gives us the identification of a 100,000 meter square within our grid zone. This further confines our area of reporting to a square which measures 100,000 meters on a side. All such squares are indicated by two letters. The two letters constitute the *100,000 meter square identification.* Again, we needn't concern ourselves with how the identifying letters were determined. They, too, will be furnished on our map margins.

Figure 1 shows the form in which the grid zone designation and the 100,000 meter square identification will probably appear on the margin of the maps we will be using.

Zone 16 S
100,000
Meters Sq.
FL

Figure 1. Grid Zone Designation and 100,000 Meters Square Identification. This will appear on map margins.

Finally we come to the digit part of our coordinate—35216659. It means the same thing as (35.21-66.59). It has merely been simplified and shortened by the deletion of the parentheses, decimals, and dash. Nothing complicated about that, is there? We'll always have an even number of digits, the first half (the first four numerals in this case) indicat-

ing the RIGHT reading and the last half representing the UP reading. On a large scale map—1:25,000 or 1:50,000—the coordinate given above designates a location to the *nearest 10 meters.* We say "meters" because grid interval appears in *meter graduations* on military maps currently being published. If we wanted to express the same location only to the nearest 100 meters we would write: 352666. And, of course, the designation of the 1000 meter grid square in which our location is included is expressed as: 3566.

There is no change in the method of determining or plotting grid coordinates. We just express them in a slightly different manner.

Now the question arises: will we be expected to give a *complete* UTM grid coordinate in reporting positions—to include the grid zone designation and 100,000 meter square identification? Except for unusual situations the answer is NO. The normal coordinate used within a division and lower units will consist only of the digit part of the reference. Just when to include the grid zone designation and 100,000 meter square identification depends on the size of the area of activities and on the interval between the grid lines.

Generally speaking the grid zone designation (such as 16S) will be *omitted* if reporting is confined to an area which does not exceed 18° north-south by 18° east-west centered on the point of reference. That is a very large area—18° representing approximately 1,240 miles at the equator. Such distances may involve a high level headquarters but most of us will rarely be concerned with them. But, in case we do cover very large areas, a grid reference box shown on the margin of the map will indicate the maximum area beyond which the grid zone designation has to be included in reporting.

The 100,000 meter square identification is omitted under the following circumstances:

1. If reporting from a 1,000 meter grid (a large scale map) is confined to an area not exceeding 100,000 meters east-west by 100,000 meters north-south (not necessarily a square bounded by 100,000 meter grid lines).

2. If the area does not fall within 25 miles of a grid zone junction.

The 100,000 meter square identification can *never* be omitted under the following circumstances:

1. If reporting from a map containing a 10,000 meter grid interval (map of scales 1:100,000 and smaller).

2. If more than one grid zone or overlapping grid zones appear on the map.

From this information we logically deduce that in divisions and lower units the expression of coordinates will normally be by digits only.

Although the UPS grid system does involve a different map projection and covers just the two polar regions, the principles involved are similar to those pertaining to the UTM grid system. Coordinates are expressed in the same manner and maps of the area will furnish the grid zone designation and 100,000 meter square identification.

Obviously, replacing our old grids with the UTM (UPS) grid is a sizable task that will take a long time to finish. Right now we are in the early part of this transition period. Necessary changes to Army manuals are being prepared. Despite the similarity of expressing coordinates in the UTM (UPS) and British Grid systems, the UTM and UPS grids will gradually replace the various British grids.

To the map reader all of the foregoing information can be boiled down to four basic items:

1. Grid interval is in meters.

2. Coordinates are expressed without parentheses, decimals, and dashes.

3. Military maps published in the future will include, as an item of marginal data, the appropriate grid zone designation and 100,000 meter square identification. These items are to be used only under circumstances outlined in this article.

4. We are presently in a transition period during which time old grids are being replaced by the UTM and UPS grid.

All of this adds up to one more big step toward simplification and unification.

Keep an eye peeled for the revised manuals.

Tank-Armored Infantry Coordination in Attack

Compiled by Lt Col George B. Pickett, Jr., Cavalry

When the 1st and 2d U. S. Armored Divisions were activated in 1940, the armored infantry component of these divisions was outnumbered by the tank component about three to one. In 1942, the armored division was reorganized to provide two armored (tank) regiments and one armored infantry regiment. A further reorganization made the ratio of tanks to armored infantry in the armored division equal —four tank battalions (three medium-one heavy) and four armored infantry battalions. This is the present organization of the armored division and it provides an equal ratio of tank to rifle platoons—48 to 48. There is no regiment in the armored division, and there is no tank unit organic in an armored infantry battalion to compare with the tank company of the infantry regiment. Even so, the armored division uses the team principle combining tanks and armored infantry. This article discusses *organization for combat*—the formation of tank-armored infantry teams; and *methods of attack*—the techniques for coordinating the advance of tanks and armored infantry in the armored division.

ORGANIZATION FOR COMBAT

The armored division is organized for flexibility in forming combined arms teams. This flexibility is provided by the *combat command—separate battalion* organization, often called a *mission type* organization. (See Figure 1.)

An armored division has two combat commands and a reserve command. These commands are tactical *headquarters* directly under the division commander. *They have no organic troops except their own headquarters companies.*

During operations, tank and armored infantry battalions are *attached* either to a combat command or a reserve command. The ratio of tank battalions to armored infantry battalions, attached to any combat or reserve command, varies with the mission, enemy situation, terrain, and the division plan of action.

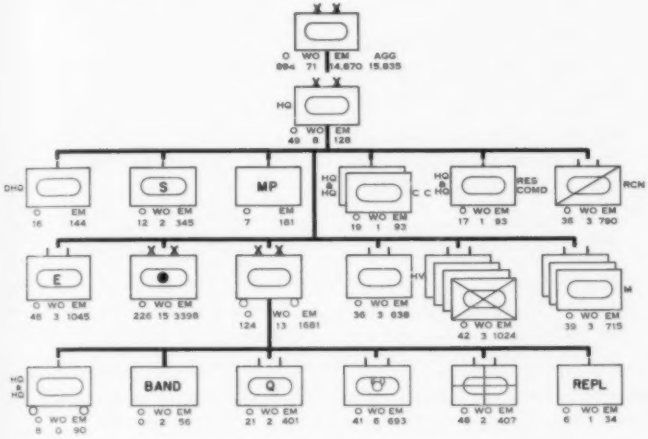


Figure 1. Organization, Armored Division.

A hypothetical 1st Armored Division might have the following organization for combat:

Combat Command A
Hq and Hq Co CCA
1st Medium Tk Bn
2d Medium Tk Bn
1st Armd Inf Bn
2d Armd Inf Bn
Co A, 1st Rcn Bn
Co A, 1st Armd Engr Bn
Co B, 1st Armd Engr Bn
Brg Co, 1st Armd Engr Bn (- 1 Plat)
Btry A, 1st AAA AW SP Bn
Co A, 1st Armd Ord Bn
Co A, 1st Armd Med Bn

Combat Command B
Hq and Hq Co CCB
4th Hv Tk Bn
3d Medium Tk Bn
3d Armd Inf Bn
Plat, Brg Co, 1st Armd Engr Bn
Btry B, 1st AAA AW SP Bn
Co B, 1st Armd Ord Bn
Co B, 1st Armd Med Bn
Det, 1st Armd Sig Co
Det, 1st MP Co
Tac Air Control Party, 9th TAF

Combat Command A (cont'd)
Det, 1st MP Co
Det, 1st Armd Sig Co
Tac Air Control Party, 9th TAF
Division Arty
Hq and Hq Btry, Div Arty
1st Armd FA Bn (105-mm) (Dir Spt, CCA)
2d Armd FA Bn (105-mm) (Dir Spt, CCA)
3d Armd FA Bn (105-mm) (Dir Spt, CCB)
4th Armd FA Bn (155-mm) (G/S)
1st AAA AW SP Bn (-)
Division Troops
Hq and Hq Co, 1st Armd Div
Recn Bn (- Co A)
1st Armd Engr Bn (-)
1st MP Co (-)
1st Armd Sig Co
Tac Air Control Party, 9th TAF
Reserve Command
Hq and Hq Co, Res Comd
4th Armd Inf Bn
Det, 1st Armd Sig Co
Division Trains
Hq and Hq, Div Tns
Div Hq (Rear)
1st Armd QM Sup Bn
1st Armd Ord Bn (-)
1st Armd Med Bn (-)
1st Armd Repl Co
Band 1st Armd Div
Btry C, 1st AAA AW SP Bn

Bear in mind that only the headquarters and headquarters companies are organic to the Combat and the Reserve Commands; all other units are attached.

Notice that Combat Command A differs from Combat Command B; that A has been given two armored infantry battalions, B, one; that A has a reconnaissance company attached, B, none; and A has two companies of engineers as opposed to B's single engineer platoon. Remember that this particular organization for combat is not permanent, that new situations mean new organization; that the division's next mission may require strengthening Combat Command B at the expense of Combat Command A.

Within the combat command, reinforced battalions are formed by attaching tank companies to armored infantry battalions, or armored infantry rifle companies to tank battalions. (See Figure 2.) Attachments are made in such a way that the resulting team, a reinforced battalion, contains the right proportion of tanks and armored infantry for the tasks assigned. This attachment may be a mutual exchange of tank and armored infantry rifle companies. However, in a situation requiring a reinforced battalion

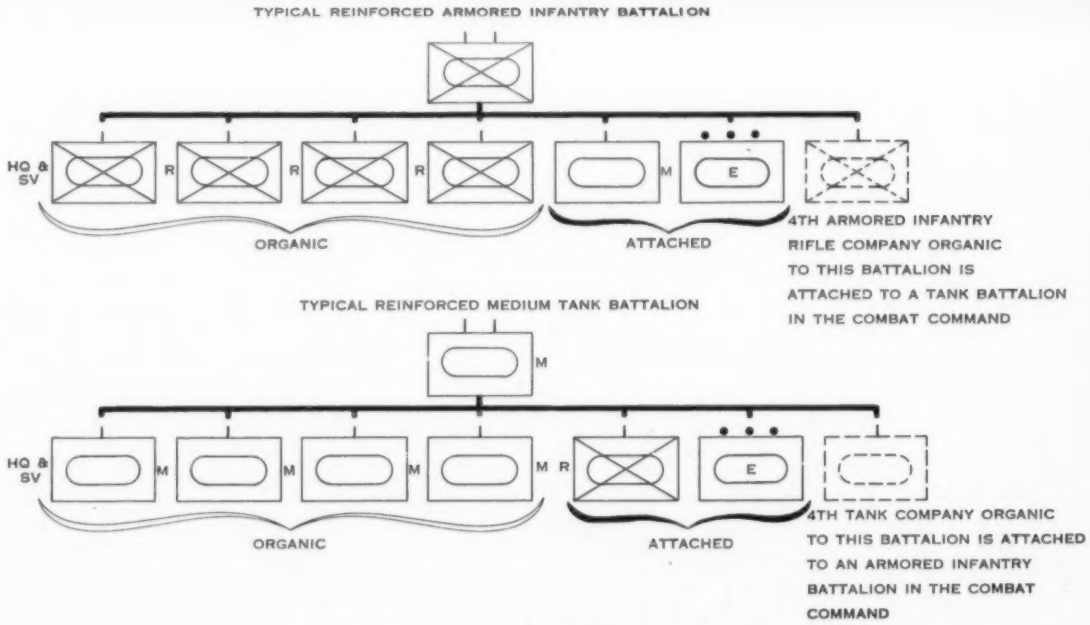


Figure 2. Typical Reinforced Battalions, Armored Division.

heavy in armored infantry, the armored infantry battalion *might* retain all four of its rifle companies and have one or more tank companies attached. Conversely, when the situation favors tank employment, a tank battalion may keep all of its tank companies and have one or more armored infantry rifle companies attached.

The team is commanded by the battalion commander to whom the attachments are made. Regardless of the ratio of tanks to armored infantry, the reinforced battalion employs tanks and armored infantry in mutual support. When necessary, armored engineers are attached to either or both types of reinforced battalions.

The same principle of attachment is followed within the reinforced battalions at company level. The reinforced armored infantry rifle company team is formed by attaching one or more tank platoons or a tank company to an armored infantry rifle company. Conversely, the reinforced tank company team is formed by attaching one or more armored infantry rifle platoons or an armored infantry rifle company to a tank company. Reinforced companies usually consist only of armored infantry and tank elements. (See Figure 3.) The battalion commander normally keeps bat-

ORGANIC
ATTACHED
USED AS ADVANCE GUARD OF REINFORCED TANK BATTALION IN EXPLOITATION AND IN TANK VERSUS TANK COMBAT.
(— PLAT)
USED AS STRIKING FORCE OF REINFORCED TANK BATTALION ON EXPLOITATION.
USED FOR NORMAL INFANTRY ATTACK MISSIONS WITH TANK SUPPORT.
USED AS ADVANCE GUARD OF THE REINFORCED ARMORED INFANTRY BATTALION ON EXPLOITATION AND FOR THE ATTACK OF PREPARED POSITIONS.
EMPLOYED WHEN THE MISSION AND/OR THE TERRAIN PROHIBITS THE EMPLOYMENT OF TANKS SUCH AS NIGHT RAIDS, RIVER CROSSINGS, AND NIGHT ATTACKS IN WHICH STEALTH IS EMPLOYED

Figure 3. Reinforced Companies Usually Consist only of Armored Infantry and Tank Elements.

talion mortar and reconnaissance platoons and attached armored engineer units under his control.

The commander of the reinforced company either forms reinforced platoons or coordinates, under company control, the efforts of the tank and armored infantry rifle platoons. The system of reinforced platoons is employed except in a few special cases. These special cases occur when some condition prevents the tanks and dismounted armored infantry from being employed together in the assault phase of the attack. The company commander coordinates tank platoons and armored infantry rifle platoons when tanks can only support dismounted armored infantry by overhead or flanking fire and if the following conditions exist:

1. From positions on or near the line of departure the tank unit can support the entire assault echelon.
2. The entire rifle company is supported by a small tank unit. (This is especially applicable when one tank platoon supports an entire rifle company.)
3. The depth of the enemy obstacle belt or the location of the enemy positions makes it impractical for the assault to be delayed until the obstacles are gapped.

METHODS OF ATTACK

Armored infantry may advance mounted, dismounted, or by a combination of both methods.

In each situation personnel are transported in their armored personnel carriers as far forward as possible: to conserve their energy; to speed the advance; to reduce casualties in crossing areas swept by small arms fire and fragments; and to use the fire power of weapons on the carriers. The mission, the type of enemy weapons, and the terrain govern the point at which armored infantry dismounts to fight. The final assault, regardless of the method of advance, is made *dismounted* in order to seize and mop up the objective and to complete the destruction of the enemy. Even after the majority of the men dismount, personnel carrier weapons are manned and fired to give close support to the dismounted personnel.

The formations and methods of attack of the tank and armored infantry platoons are selected:

To develop the fire power of the tanks. The tank unit

deploys to develop the maximum fire power permitted by the situation. To concentrate its fire to the front, it assumes a line formation; to fire to a flank, the tank unit echelons in that direction; and to fire to the front and both flanks, it uses a wedge formation.

To provide security. The tank unit combat formation that provides the greatest security for the team is assumed.

To insure maximum control consistent with the tactical situation. The tank and armored infantry elements assume the easiest formation to control that develops the required fire power and provides security.

To conform to the terrain. The formations adopted take advantage of any terrain barriers or defilade that protect them from fire and observation.

To enable the tanks to protect the carriers from hostile armor. The tank-armored infantry team commander constantly considers the fact that his armored personnel carriers have no cannon to engage enemy tanks. He adopts the formation and method of attack that gives the mounted armored infantry antitank protection. When antitank protection is inadequate, *mounted* armored infantry cannot advance in areas where enemy tanks are defending. *Dismounted* armored infantry, without friendly tank support, can protect itself against hostile tanks better than mounted armored infantry without tank support.

MOUNTED ATTACKS

Tanks and mounted infantry are coordinated in the attack by:

(1) Using an *integrated formation.*

(2) Having the mounted armored infantry follow the tanks by short *successive bounds.*

(3) Having the tanks and mounted armored infantry *converge on the objective* from different directions.

Time or VT fire may be placed over a tank-armored infantry team when the armored infantry is mounted. This time fire may be used in conjunction with any of the mounted methods of attack. In preparation for this fire, all tank hatches and all carrier hatches and doors are closed. This protective time fire works best when using an integrated formation of tanks and mounted armored infantry.

Time fire is also useful when the armored infantry follows the tanks by successive bounds, and when the two elements of the team converge on the objective from different directions.

Successful use of time fire depends on its being lifted or shifted promptly when the armored infantry dismounts for the assault. The armored infantry uses radio, supplemented by visual signals such as pyrotechnics, to direct lifting or shifting the time fire. The supporting artillery may signify lifting or shifting fires by mixing several rounds of HC smoke in the last volley. This use of smoke supplements the radio announcement that the fire has been shifted; it does not replace radio. Once the time fire is lifted or shifted, the team launches its assault before the enemy recovers.

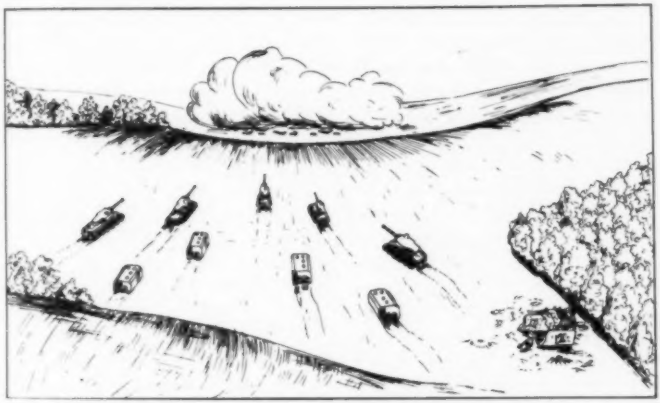


Figure 4. Tanks and Mounted Armored Infantry Advancing in Integrated Formation.

The integrated attack formation normally puts the tanks between the enemy and the mounted armored infantry. (See Figure 4.) When so employed the tanks and mounted armored infantry reach the assault position almost simultaneously. This reduces the time needed to coordinate and launch the assault by the dismounted armored infantry in conjunction with the tanks. When approaching the objective, tank weapons directly protect the armored personnel carriers. In addition, the very presence of tanks indirectly

protects the carriers. An enemy tank or antitank gunner, observing an integrated formation of tanks and armored personnel carriers advancing, normally fires first on the target most dangerous to him—the tanks. If this fire is of sufficient intensity to disrupt the tank advance, the mounted armored infantry has a few moments to seek defilade before continuing the advance dismounted. The greater the size of the tank unit in the attack, the fewer losses are sustained by the mounted armored infantry in the formation.

On the morning of 20 December 1944, the Germans, using an integrated formation, attacked one of the battalions of the 101st Airborne Division at Marvie on the Bastogne perimeter. Marvie was occupied by an airborne infantry battalion and a light tank company. The Germans held the wooded area just north and east of the town. The attack began when German Mark V (Panther) tanks opened fire on the American M-5 light tanks in Marvie. Although the U.S. tankers returned the fire, their 37-mm guns were no match for the German 88-mm tank cannon. Seeing the unequal struggle, the airborne infantry regimental commander ordered the light tanks to withdraw. Immediately after the light tanks withdrew, a reinforced platoon of German tanks and mounted panzer grenadiers (armored infantry) launched their assault. The German force consisted of four Panther tanks and six half-tracks full of panzer grenadiers, supported by the fire of two assault guns from positions in the woods.

The Germans advanced in an integrated formation with the tanks deployed on line and the half-tracks closely following the tanks, also in line formation. The attackers raced toward Marvie as fast as the tanks and half-tracks could move, firing all the tank and half-track machine guns furiously. A platoon of U.S. medium tanks, located on the ridge west of Marvie, knocked out the four Panther tanks with flanking fire. However, the half-track borne German infantry never slowed down. In spite of the fact that all four tanks were lost, the half-tracks continued to race toward Marvie, losing one half-track to U.S. tank fire before reaching the built-up area.

As soon as the five remaining half-tracks reached Marvie, the panzer grenadiers dismounted and, covered by machine-gun fire from their half-tracks, began to clear the town. The speed and violence of the German attack enabled a small, hopelessly outnumbered unit to disrupt a defending battalion for four hours. Although the attack eventually failed, the action at Marvie indicates the speed and violence which the attacker can gain by using the integrated formation. Remember, too, that the half-tracks used by the Germans at Marvie were far less efficient cross-country vehicles than the new armored personnel carrier.

Successive bounds: A mounted armored infantry unit may follow a tank unit by short successive bounds. This method is used normally when a small tank unit is attached to a larger armored infantry unit; when situations are obscure and information of the enemy and terrain is restricted; and when the tank unit is advancing by alternate or successive bounds. Using this method, the tanks arrive in position to assault before the armored infantry and wait until the armored infantry arrives and dismounts before assaulting. During this wait the tanks usually place direct fire on the objective in preparation for the assault.

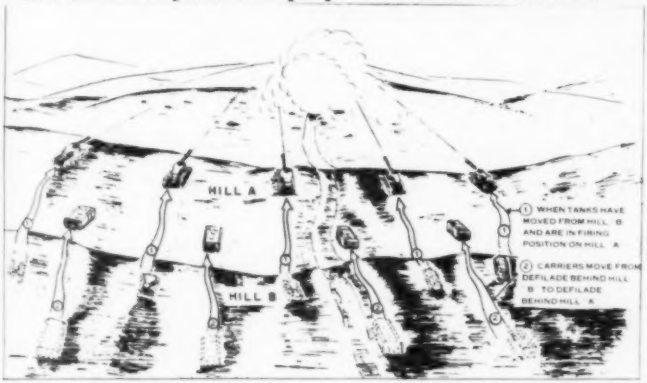

HILL A
HILL B
① WHEN TANKS HAVE MOVED FROM HILL B AND ARE IN FIRING POSITION ON HILL A
② CARRIERS MOVE FROM DEFILADE BEHIND HILL B TO DEFILADE BEHIND HILL A

Figure 5. Tanks and Mounted Armored Infantry Advancing by Successive Bounds. (Page 93.)

This method has three principal variations. The tank unit, which the armored infantry unit follows, may advance *as a unit* in a combat formation; the tanks may advance by *successive bounds;* or they may advance by *alternate* bounds. If the tank unit advances as a unit to a terrain feature, it remains there in firing positions, until the armored infantry unit moves into complete defilade behind that terrain feature. The tank unit then advances to the next terrain feature and the process is continued until the assault position is reached. (See Figure 5.)

In some situations the tank unit may advance by alternate or successive bounds. This occurs when the size of

the tank unit in the team is small or when the rate of advance has not permitted development of a detailed supporting fire plan. If the tank unit employs successive bounds, the armored infantry unit moves with the rear tank section (or platoon) as it moves forward to join the leading section. If the tanks employ alternate bounds, the mounted armored infantry moves forward with the rear section as it moves to join the leading section. It then halts behind the overwatching section, waits until the moving section is in firing position, then moves forward with the rear section to join the section which is in firing position. This procedure is continued to the assault postion.

Converging attack: Tanks and armored infantry in carriers may converge on the objective from different directions. (See Figure 6.) The advance of the tanks and mounted armored infantry is timed so that the tanks and armored

Figure 6. Converging Attack of Tanks and Mounted Armored Infantry.

infantry arrive on the objective simultaneously. Enough tanks are used to provide their own support, in conjunction with artillery and mortars, without the protection normally provided by armored infantrymen. When this is not possible, some infantrymen accompany the tanks to give them close-in protection. The terrain should be free of tank obstacles and should be sufficiently open to prevent

the enemy from effectively employing individual antitank weapons. This method provides surprise, fire effect, and shock action. Close coordination times simultaneous arrival of the units on the objective.

Converging attacks are widely used in situations where reinforced companies, strong in armored infantry, are employed in secondary attacks while reinforced companies, strong in tanks, make the main attack, which generally is an envelopment. Each reinforced company may employ any of the other methods of attack, either mounted or dismounted, as it converges on the objective. This method is also used when terrain favors tank employment in one portion of the zone and restricts it in another. A dismounted attack can be made over the terrain not favorable for tank employment while the tanks attack, supported by additional armored infantry, over the favorable tank terrain.

DISMOUNTED ATTACKS

Dismounted armored infantry, with direct fire support of tanks, leads the attack when the type of mission, the nature of the terrain, the enemy disposition, or the composition of the tank-armored infantry team cause the commander to select this method of attack. Such situations usually occur in attacks through antitank mine fields or defiles, in river crossings, or in combat in towns or woods. In dismounted attack, the carriers may be used to supplement the supporting fires, to fire to the flanks, and to transport support platoons and reserve companies until they are committed. Tanks and dismounted armored infantry may be coordinated in the attack by having:

(1) Tanks support by fire then join dismounted infantry in the assault.

(2) Tanks and dismounted armored infantry approach the objective from different directions.

(3) Tanks support dismounted armored infantry by overhead or flanking fire.

(4) Armored infantry riding tanks.

(5) Tanks and dismounted armored infantry advance together.

(6) Tanks initially support by fire then pass through the dismounted armored infantry and precede them to the objective.

Tanks supporting by fire, then moving forward to join the dismounted armored infantry for the assault: In this method, the tanks fire from hull-defilade position while dismounted armored infantry moves forward. When the armored infantry masks the tank fires, the tanks move forward to new positions to give continuous fire support. When the foot troops approach the assault position, the tanks move forward rapidly to join in the final assault. This method can be used when the objective is clearly defined and when the terrain is open enough to permit tanks to fire overhead or to the flanks of the advancing armored infantrymen. It provides tank fires to cover the movement of the armored infantry from the line of departure to the assault position and tank fire power at the critical time of the assault. Since tanks moving forward to join the assault don't have to move as slowly as dismounted armored infantry, they are exposed to enemy antitank fire for less time. This method is used frequently in attacks through obstacles which can be breached to permit the tanks to rejoin the dismounted armored infantry for the assault.

An instance of tanks supporting by fire, then advancing to join infantry in the assault occurred during the Bastogne-Houffalize drive by the 11th Armored Division. The objective of CCA, 11th Armored Division for 13 January 1945 was the high ground immediately south of Bertogne, Belgium. Seizure of this terrain feature would cut the main Laroche-Houffalize highway, which was the last main escape route left to the Germans inside the Bulge. Task Force Bell of CCA consisted of the 42d Tank Battalion and the 63d Armored Infantry Battalion. The task force plan of attack called for the armored infantry battalion to attack through the mine field on the right of the Longchamps-Bertogne Road and advance to the edge of the woods overlooking the combat command objective. Company A, 42d Tank Battalion, was to support the 63d Armored Infantry Battalion by fire while the 63d advanced. Once the mine field at the near edge of the woods was gapped, the tank company was to pass through the rifle companies and lead the tank battalion in the attack on the combat command objective. (See Figure 7.)

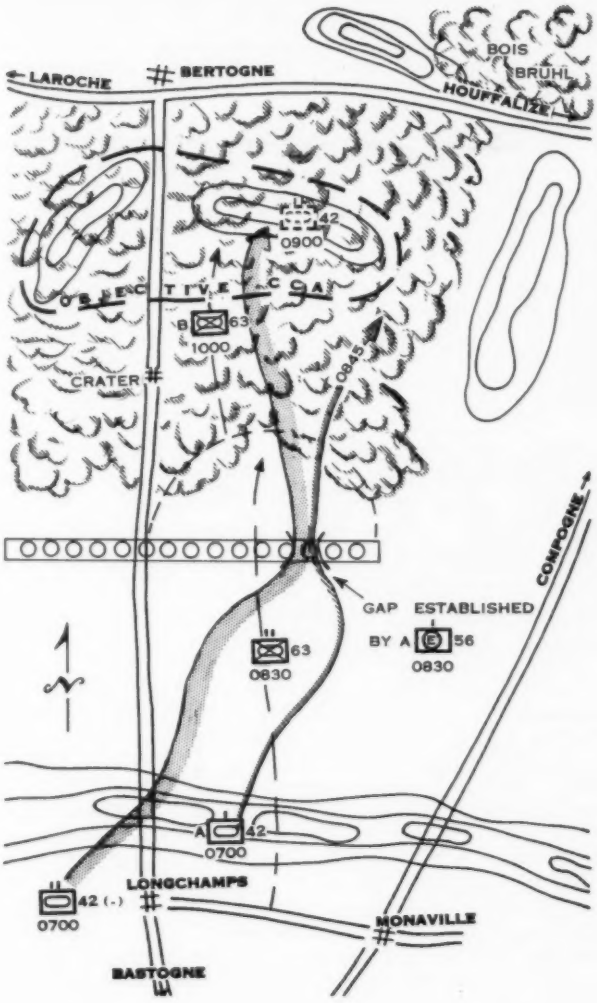


Figure 7. Attack by CCA, 11th Armored Division - Tanks Supporting by Fire, then Joining Dismounted Armored Infantry in Assault.

The initial attack by the armored infantry battalion through the mine field proceeded rapidly, although the Germans reacted by placing intense heavy mortar fire on and in front of the mine field. Company A, 42d Tank Battalion, supported the infantry from defiladed positions northeast of Longchamps. By 0830 the infantry advance had progressed into the woods out of direct fire support of the tanks. Simultaneously with the infantry advance, Company A, 56th Armored Engineer Battalion, gapped the mine field in the zone of advance. At 0845, Company A, 42d Tank Battalion, passed through the gap and moved into the woods to join Company B of the infantry battalion. As soon as Tank Company A reached the edge of the woods, it advanced rapidly and overran the combat command objective. It left the infantry following on foot through the deep snow. Company A was promptly reinforced by the remainder of the 42d Tank Battalion to repulse a movement of German armor from Bertogne to Compogne. Company B, 63d Armored Infantry Battalion, meanwhile, continued its difficult advance through the snow and joined the tanks on the objective.

Tanks and dismounted armored infantry approaching the objective from different directions: This is sometimes necessary when the only route available for the tanks would unduly expose the dismounted armored infantry. While this method provides surprise, fire effect, and shock action, its assault phase is hard to coordinate. The difficulties in employing this method are the same as those discussed under converging attacks.

The 42d Tank Battalion (Reinforced) of the 11th Armored Division used this method in attacking Konigsau, Germany. On 19 March 1945, the 42d Tank Battalion (Reinforced) was advancing rapidly through the Rhenish Palatinate with Worms, on the Rhine, as its objective. Along its route of advance it reduced the German defenses of Kellenbach; but the enemy had blown the bridge over the stream in the center of town, making it necessary to locate a crossing point for the vehicles. A ford was found about one-half mile northeast of the blown bridge. Company B was immediately directed to cross the ford and prepare to move cross-country into Konigsau. This was the next town down the canyon through which the battalion had been advancing. The straight line distance from Kellenbach to Konigsau was about a thousand yards, but the road and stream meandered so much that the road distance was slightly over a mile. (See Figure 8.)

Attacking Konigsau, Company B, 63d Armored Infantry Battalion, climbed the west wall of the canyon and advanced down the ridge line to seize the high ground west of Konigsau. Company A, 63d Armored Infantry Battalion, waded the stream at Kellenbach

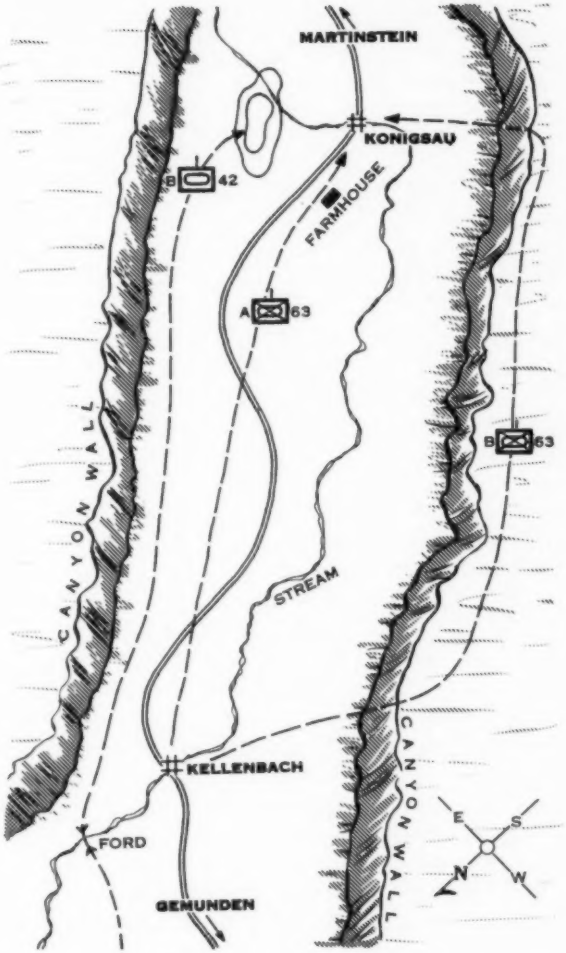


Figure 8. Attack by 42d Tank Battalion (Reinforced)- Tanks and Dismounted Armored Infantry Approaching Objective From Different Directions.

and advanced astride the only road leading into Konigsau. Company B of the tank battalion moved across country to the ridge northeast of Konigsau to support the attack of both rifle companies. Tank Company B reached this high ground long before the dismounted troops. Because of the difficult footing, Company B of the armored infantry had trouble advancing down the ridge west of Kongisau. Armored Infantry Company A advanced unopposed until it encountered a large farmhouse about 200 yards from town. Resistance here was overcome by tank fire of Company B of the tank battalion. After neutralizing the farmhouse positions, Company B, 42d Tank Battalion, started to move into Konigsau. Its advance was coordinated with the advance of Company A, 63d Armored Infantry. Company B, 63d Armored Infantry, occupied the ridge west of Konigsau while Company A, 63d Armored Infantry, and Company B, 42d Tank Battalion, cleared the town.

Tanks supporting dismounted armored infantry by overhead or flanking fire: From hull-defilade firing positions on or near the line of departure, tanks support the dismounted armored infantry by overhead or flanking fire all the way from the line of departure to the objective. This method is used when natural or artificial antitank obstacles prohibit tank movement to the objective, or when additional tanks increase the tank support in the other methods discussed.

Armored infantry riding tanks: This is an emergency means of transporting armored infantry. The casualties which would be suffered from air burst and automatic weapons fire make this method too costly to be employed in attacking an organized position. It is used when road space or fuel shortages prohibit use of the armored personnel carriers.

Tanks and dismounted armored infantry advancing together: Dismounted armored infantry and tanks move together at the same rate of speed throughout the advance. The infantry may move slightly in advance of the tanks, between them, or immediately in their rear. As the advance progresses these relative positions of tanks and infantry are adjusted according to the enemy resistance and the terrain. This method is used when visibility is limited, in built-up areas, and in woods; and when adverse terrain forces the tanks to advance slowly. It permits close coordi-

nation and maximum mutual support, but it sacrifices speed and surprise. The slow rate of movement increases tank vulnerability to hostile antitank fires and gives the enemy time to increase the intensity of his defensive fires.

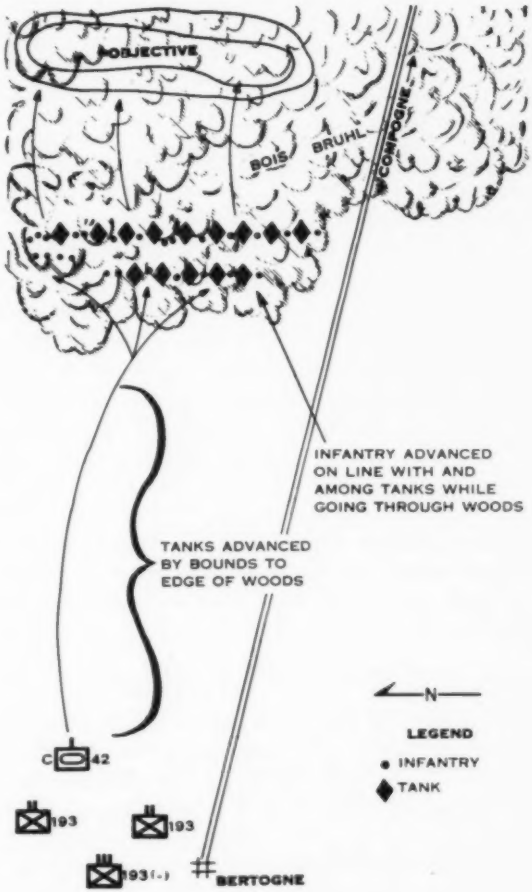


Figure 9. Attack by Company C, 42d Tank Battalion, and 193d Parachute Infantry Regiment - Tanks and Dismounted Armored Infantry Advancing Together.

During the Allied drive to reduce the Bulge Salient, Company C, 42d Tank Battalion, was attached to the 193d Parachute Infantry Regiment for the attack on the Bois Bruhl, 15 January 1945. The Bois Bruhl was a series of high wooded hills, east of Bertogne and north of Compogne, Belgium. The 193d Infantry planned for the tank company to attack directly east from Bertogne to the Bois Bruhl. The company commander was instructed to keep his company about 50 to 100 yards ahead of the advancing infantry. The company was employed as a unit under the tank company commander. The attack jumped off as scheduled. Although the snow slowed down the paratroopers, the tanks found good traction on the frozen ground. The tank company advanced by short bounds ahead of the infantry until it reached the edge of the Bois Bruhl. At this point, the riflemen and tanks advanced through the woods on line together. The objective was taken without the loss of a single tank and with only a few infantrymen wounded, mostly by mortar fire. (See Figure 9.)

Tanks initially support by fire then pass through the dismounted armored infantry and precede them to the objective: This method uses the armor protected fire power of the tanks throughout the greater portion of the attack. When tanks advance from their initial firing positions they move rapidly through the advancing infantry and lead the attack. The armored infantry either continues the advance dismounted or mounts and follows the tanks depending upon the distance to the objective and the nature of the opposition. When the supporting fires lift just before the tanks arrive on the objective, the infantry immediately opens assault fire and follows the tanks onto and through the objective.

COMBINATION METHODS

Tank-armored infantry methods of attack are flexible and commanders use any combination or modification of methods which produces success. Dismounted armored infantry is employed frequently to break through mine fields while the tanks of the team give direct support by overhead or flanking fire. Once the obstacle is breached, the tanks and armored personnel carriers move forward to join the dismounted armored infantry. When the tanks and cariers rejoin the armored infantry, any of the other methods of attack, mounted or dismounted, is used to continue the

attack to the objective. When a converging attack is used, frequently other methods are combined with it. One reinforced platoon, strong in tanks, may advance on the objective from one direction using any of the mounted methods while a reinforced platoon, strong in armored infantry, advances from a different direction using any of the dismounted methods of attack.

SUMMARY

The armored division fights as combined arms teams at all levels of command from the platoon to the division itself. These teams can use a variety of methods of attack. The method used depends on the mission, the enemy situation, the terrain, and the plan of action. Whatever method is used, the armored infantry and the tanks support each other.

***Your Photomap*, by Maj John D. Foulk. Concise information on converting an aerial photograph into a photomap complete with grid, scale, and magnetic north arrow. To appear in July 1950 QUARTERLY.**

The Invisible Soldier

Compiled by Capt Harry V. Beck, Infantry

H. G. Wells had the right idea with his concoction that made the Invisible Man invisible, and he could have made millions from the infantry during the past war. There probably isn't a doughboy today who has not been in one or more bad spots where he sorely wished he could evaporate and disappear.

Early in the war there were many who were almost ready to believe that the Japanese had this faculty for becoming invisible. On the East European front, many Germans were laying the same attribute at the Russian soldier's door. But this ability to hide, move, and use the ground - to disappear in the earth - is not a characteristic peculiar to any particular race. Any soldier of any army can learn it and perfect it by practice - much practice.

Many times in the past war, the American soldier did little or nothing to develop a sensitive and critical eye to the terrain. This was particularly true of the troops who were not in the immediate front lines. Our superiority in air power, men, and material gave us an apparent immunity that may never be ours again in combat. We cannot assume that any future aggressor will be anything but a superior fighter. We - the infantry - must return to intensive study, instruction, and practice in the techniques of the individual soldier in battle.

This article is about the use of cover, concealment and camouflage, and movement on the battlefield. Most of it is just as applicable to rear areas in combat zones. These principles and techniques were proved in combat in the last war, but they are just as basic as when General Braddock's troops learned them the hard way.

COVER

Cover is protection from enemy fire of any type. While ditches and foxholes may protect you from flat-trajectory fire and partially from ground detonation of mortars and artillery, they provide very little protection from time or VT fire. This increases the desirability of overhead cover. You can easily make such cover from logs, boards, or doors covered with dirt.

Figure 1a. This is cover from flat-trajectory fire.

A reverse slope position—so popular with the Germans in the last war—will afford you excellent protection from direct fire such as rifle or machine gun. Small caves in banks or under trees—extensively used by the Japanese—also make good positions.

You can easily recognize such natural cover as a ditch, shell hole, or embankment, but you are a well trained soldier when you can see the swells and folds in the ground that you can—and should—use. These slight depressions provide you excellent cover in what at first appears to be flat, open ground.

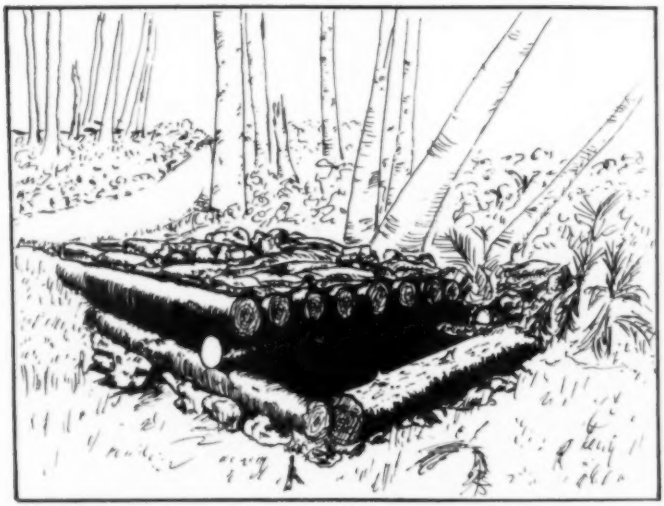


Figure 1b. This is cover from fire of any type.

When no natural cover exists - make some. Engineer or entrenching tools are usually available, and you can improve shell holes or natural cover to make a good position with minimum effort.

CONCEALMENT

Concealment is protection from hostile observation. It may be natural or artificial. Bushes, grass, walls, etc., need no change to conceal you. You may construct artificial concealment from various materials such as nets, leaves, and burlap. The Germans at Mount Cassino gave us a good lesson on the use of debris and destroyed buildings for concealment.

USE OF COVER AND CONCEALMENT

The application of cover and concealment on the battlefield is actually just the application of good common sense. Your training will enable you to choose and use the right position and to move under the many conditions you may encounter in combat. Here are a few general rules you can use as a guide:

1. Use all the cover and concealment available. The trees, rocks, bushes, earth, and man-made structures are there requiring no effort from you other than their intelligent use.

Figure 2. Use the shadows.

2. Avoid unnecessary movement. Quick movement instantly attracts the eye. It is as easily seen as a man out of step in a parade. When it is necessary for you to move, move carefully. When changing positions, use a concealed route.

3. Take a prone position. You present a smaller target and do not tire as quickly as when in the kneeling or other positions.

4. Use the shadows. They conceal you from both air and ground observers.

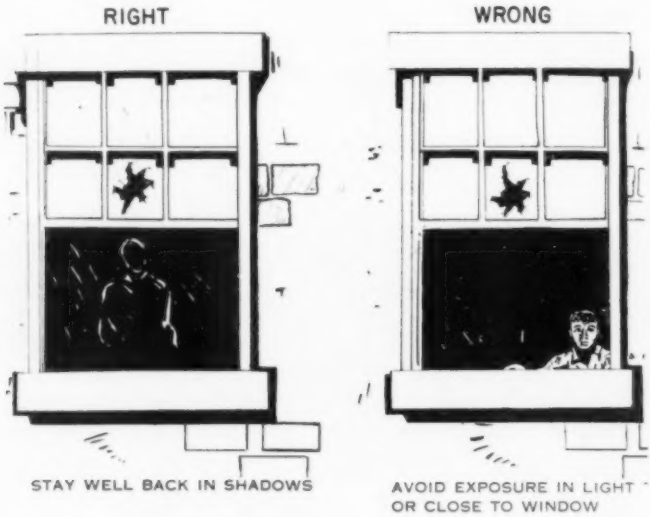


Figure 3. Shadows conceal.

5. Watch your background. Avoid skylines and tops of walls or ditches unless they are well broken by brush or debris. Stick to areas where your uniform blends and you do not form a silhouette against a contrasting background.

6. Break the regular outline and disguise the revealing shape of your military equipment and your body.

7. Expose nothing that glistens. You can see the light glinting on a polished surface for miles.

8. Observe and fire around the side of an object. This conceals most of your head and body.

9. Avoid outstanding landmarks such as lone trees and road junctions.

Figure 4. Errors in concealment.

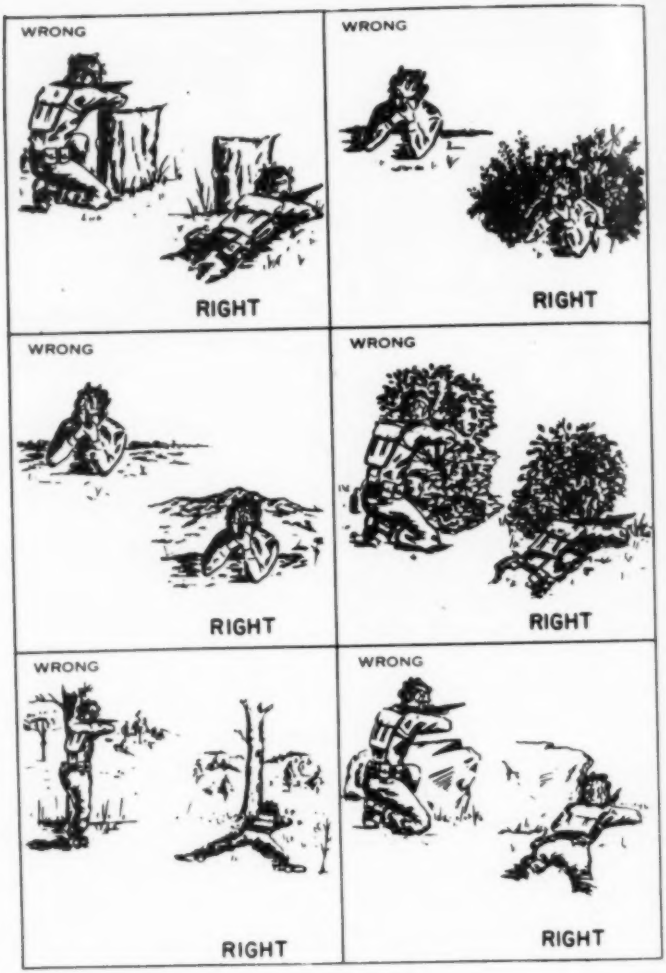


Figure 5. Battlefield positions.

CAMOUFLAGE

Camouflage is the technique and materials you use to conceal yourself or an installation in order to deceive and outwit the enemy. The materials may be natural or artificial, but the natural materials at hand are what you will use the most. Whether you or your position is made to blend with the surroundings or look like something else, good camouflage makes you hard to recognize from ground or air.

In using camouflage you

1. Use all available natural concealment.
2. Break up the form, shadows, texture, and color of the objects.
3. Camouflage positions as you prepare them.
4. Don't over-camouflage. Most people tend to use too much.
5. When using natural material, make it look like it's growing or is a natural formation.
6. Inspect the camouflage. Keep it fresh and natural looking.
7. Enforce camouflage discipline on yourself and those about you. Watch out for tracks, trash, and other evidence that will reveal your position.

CAMOUFLAGE MATERIALS

You can use almost anything for good camouflage—if you use it wisely. The materials that you will usually have available include camouflage clothing, paints, nets, vegetation, and dirt.

If camouflage clothing is not issued to you, you may make it by painting or disguising your fatigues or a suit made of burlap. If you make a sack suit of burlap make it large and loose and fashion yourself a hood. You will blend better if you use two or more colors in painting your clothing. In snow, a sheet draped over your body is very effective.

You may use a net woven with burlap, grass, or leaves. This is very effective as a screen or when you merely drape it over your body. Remember, though, too much material creates a new and suspicious object.

CAMOUFLAGE OF THE FACE

Your face reflects light, and you can be easily picked up. You can avoid this reflection by painting your face in irregular splotches. Don't use straight stripes. They are not effective. Color all your exposed skin. Suitable coloring materials are lampblack, burnt cork, grass stain, or plain mud.

Figure 6. Camouflage of the face.

CAMOUFLAGE OF EQUIPMENT

The outline of your helmet is very distinctive. Here are three ways you can camouflage it. One method is to use paint or mud to splotch it irregularly. Another method is to make yourself a helmet cover of cloth or burlap colored to blend with the terrain. A third method you can use is a

helmet net with a few leaves or some grass stuck into it. If you don't have a net, you can tie a wire or string around the helmet. Let the foliage hang over the edges of your helmet to break the outline—and keep the foliage sparse.

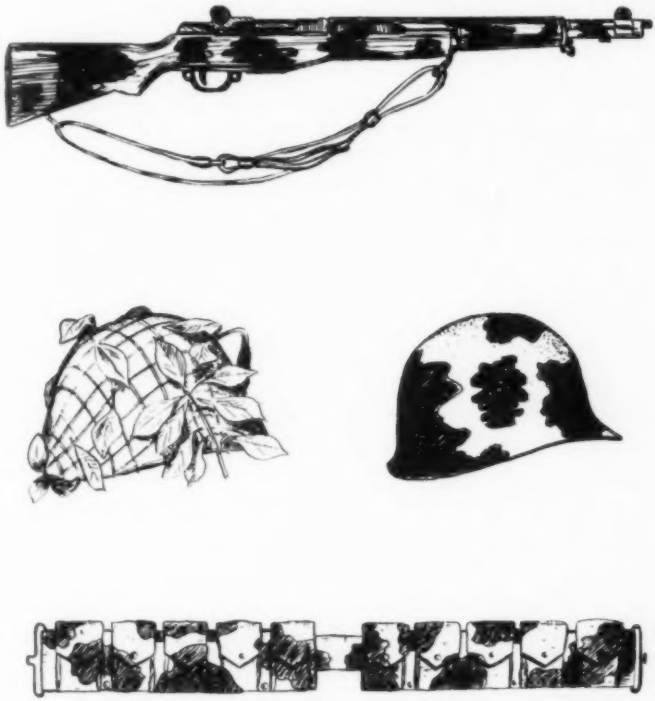


Figure 7. Camouflage of equipment.

Your web equipment is camouflaged in a manner similar to your clothing. Your best bet is to splotch your equipment with paint, mud, or charcoal. Do not use anything on a weapon which might interfere with its operation. Do not wrap garnishing or other materials around a weapon. Any shiny surfaces on the stock or barrel of your weapon should be darkened with mud or blackening.

POSITION CAMOUFLAGE

Consistent with your mission, select a position to take advantage of the natural concealment. Stretch a camouflage net over your position, if you have such a net. Cover or remove the dirt you dig. Make a cover and camouflage the hole. The main thing for you to remember is to keep

Figure 8. Position camouflage.

it like the surroundings. Don't make grass grow in a pile of rocks or rubble. And *don't over-camouflage* the position. Remember, too, foliage wilts and you have to change it.

CONCEALMENT AT NIGHT

The darkness of night furnishes you excellent concealment. That darkness is your friend. Here are the main points to observe at night:

1. Stay off skylines! Even at night the sky will silhouette you.

2. Completely blacken your face, hands, and equipment except in snow. In snow wear white, and color all your equipment white.

Figure 9. Dress at night.

3. Keep silent. Avoid dry brush and noisy equipment.

4. Show no lights. An ordinary match can be seen for miles.

5. When you are surprised by a bursting flare, drop quickly to the prone position. The flash of light will temporarily blind the enemy and conceal your movement. Remain still in the prone position until the flare burns out.

6. Avoid wearing your steel helmet on night patrol. It makes a distinctive noise when brushed or struck, and it impedes your hearing. If you must wear a helmet, cover it with a cloth.

DAY MOVEMENT

You will find it necessary frequently during day operations to move through an area that is occupied by the enemy, or you may have to change position when you are under enemy fire or observation. Here are a few rules to observe when you move:

1. Before you leave one concealed position, pick your next place. Observe it carefully for enemy, then move by the best covered and concealed route. Take advantage of fog, smoke, or haze to move unseen.

2. When you move through tall grass or grain fields, move when the wind blows the tops. You should avoid obvious straight lines by frequently changing your direction slightly.

3. Avoid disturbing animals or birds. They may attract the enemy's attention to you.

4. Take maximum advantage of such distractions as shell fire or low-flying planes.

5. Avoid leaving footprints. Select your route over rocky, graveled, or grassy ground.

6. When you swim a stream, a small raft of brush can help you keep your weapon and equipment dry.

7. Cross a road where you have some cover and concealment—a low spot in the road, a curve, or large culvert. When you move across, move fast.

8. When you have to crawl across a large open area such as a plowed field, follow the low sections and furrows as much as you can.

9. Avoid areas with many loose stones or steep, slippery slopes. When moving on a slope, dig the edges of your boots into the ground to prevent slipping.

10. When you are heavily loaded, you move slowly and tire quickly. Carry only the essential equipment.

DAY CRAWLING

When you are in close contact with the enemy, you will find it necessary frequently to crawl in order to move unseen. There are two ways you can crawl — flat on the ground or on the elbows and knees.

Figure 10. Crawling — Low position.

When cover and concealment is scarce:

Keep your body flat on the ground. Hold your rifle sling at the stock ferrule swivel and let the butt of the rifle drag on the ground. Push your arms forward and draw up your right leg. Move forward by pulling with your arms and pushing with your right leg.

Figure 11. Crawling — High position.

When more cover and concealment are available and more speed is desired:

Keep your body free of the ground and rest your weight on your elbows and knees. Cradle your rifle in your arms. Move forward by alternately advancing your right elbow and left knee, then your left elbow and right knee.

DAY RUSHING

Rushing is the fastest way you can move from one position to another, but it is an exposed movement. Before starting your rush, select your next position and observe it carefully for enemy.

Figure 12. Starting the rush.

Start your rush by rising on your hands and stepping off in one quick movement. Crouch low and move in a *straight line* to your new position.

You hit the ground by going down on your knees and breaking your forward fall with the butt of your rifle. If you think the enemy saw you, roll to one side - if cover and concealment exist.

Figure 13. Hitting the ground.

NIGHT MOVEMENT

Night movement usually demands great silence and regulation of direction. The following aids will help you in silent movement at night.

1. Move by bounds, a short distance at a time. Halt. Listen. Then move again.

2. Move in the open. It is quieter and much easier to maintain your direction.

3. Take advantage of other noises to cover your sounds as you move.

4. Do not run at night. The noise and the danger of falling is too great.

5. You may stifle a sneeze by pressing up on your nostrils, and you can stop a cough by squeezing your Adam's apple slightly. Bury your nose and mouth in the crook of your arm to muffle a sudden cough or sneeze.

6. If you have a ringing noise in your ears, yawn or hold your nose and blow gently.

7. Preserve your night vision. Keep at least one eye closed when a flare lights.

8. Guide on prominent terrain features such as hills, streams, or woodlines to maintain your direction.

9. Consider all persons unfriendly until proven otherwise. Lie down and silhouette an approaching person against the sky.

WALKING AT NIGHT

When you walk at night, lift your knees to avoid swishing the grass or brush. Lower your foot, toe first, to insure solid footing.

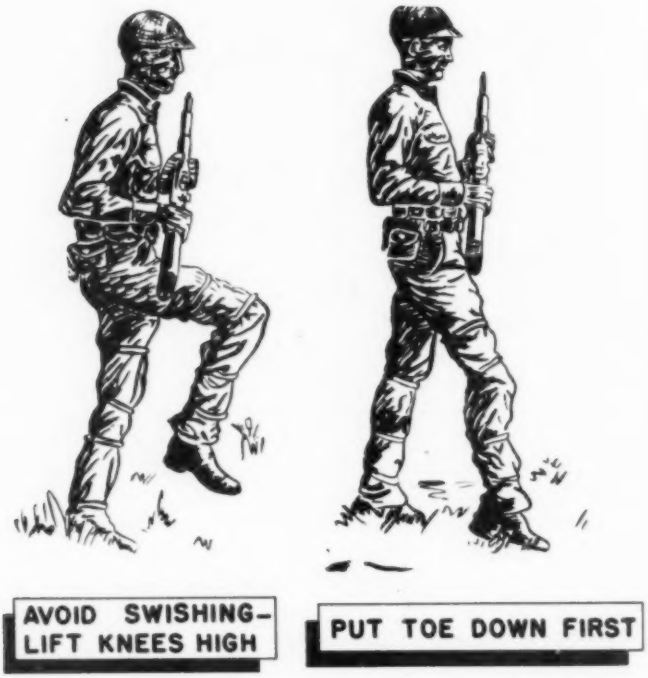


Figure 14. Walking at night.

CRAWLING AT NIGHT

Crawl at night on your hands and knees. Feel the ground in front of you to clear away noisy objects. This method of moving is slow but very silent.

Figure 15. Crawling at night.

SUMMARY

So you see, there is nothing mysterious about how to protect yourself on the battlefield. If an enemy can't see you, he probably won't shoot. And if you use your cover properly, he couldn't hit you if he did. Common sense, a cool head, and a critical eye may save your life. Combine these with a lot of practice in the principles explained here and you'll be as adroit at concealing yourself as the early American Indian.

One last caution. Most of the principles we have discussed apply chiefly to operations such as patrolling, defense, mopping-up, and the like. When you are attacking with a unit, speed and aggressiveness count most. Especially when you assault the objective—night or day—this speed and this aggressiveness will pay you big dividends in lives saved, including your own.

The New Airborne Division

Compiled by Major John W. Urban, Infantry

Editor's Note: Space limitations prevent printing all T/O&E Charts of the Airborne Division in the QUARTERLY.

A special text containing charts of all units, including companies, is sold by The Book Department, The Infantry School. Order: SPECIAL TEXT, AIRBORNE DIVISION. Price 25c.

Last issue we showed you the T/O&E of the airborne infantry regiment. Now we present the remainder of the airborne division. This division is losing some of its individualism—becoming more like the standard infantry and armored divisions. In so doing it becomes more of a self-supporting organization, one capable of sustained combat.

There are units within the airborne division which are exactly like those of both the armored and infantry divisions. The band and the replacement company are the same in all three divisions. The infantry and airborne divisions' reconnaissance companies are just like the reconnaissance companies in the armored division's reconnaissance battalion. The tank companies in the tank battalion of all three divisions are alike.

At this point organization of the armored division diverges but the airborne and infantry divisions have other points of similarity. The quartermaster companies are the same in both divisions; and in the regiments, as was pointed out in our last issue, many of the smaller units are just alike. The present airborne division is, in effect, a modified infantry division.

Their mode of transport makes airborne units a powerful adjunct to the attack of infantry and armored forces. Their aerial entry into combat overcomes barriers which would slow down or prevent movement of ground forces.

Trained in both glider and parachute techniques, airborne units are strategic threats employed by commanders of army group or higher command. These specialized troops are not normally employed on missions which can be performed

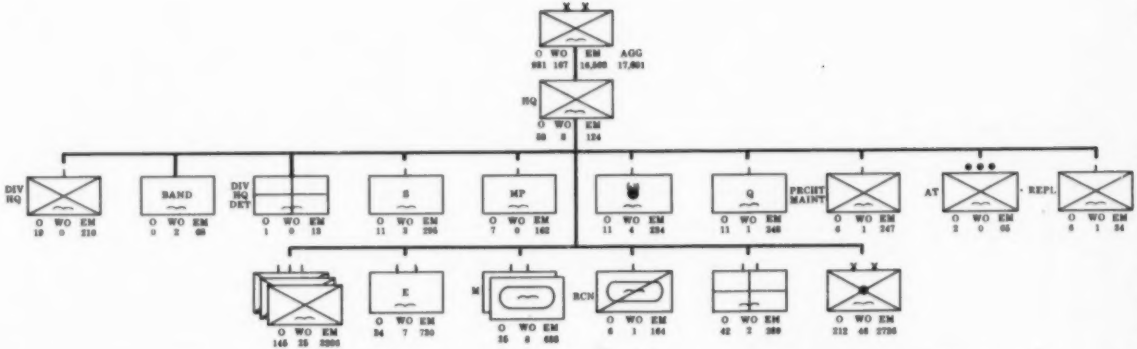
as readily by standard infantry divisions. Accordingly, airborne units normally are withdrawn from action after a ground link-up is made with the air head.

Despite this planned withdrawal from action, in many cases it may not be feasible to replace airborne units as soon as ground forces link-up with the airhead. For instances of this sort, the new T/O&E provides strength not previously allotted. Previously, armor and additional artillery were attached to an airborne division if it continued to fight after the link-up. Now tank battalions and more and heavier artillery units have been added. While not air-transportable, these units join the division after the ground link-up. Being organic to the division, they will have had the advantage of training with the organizations with which they are to fight.

The new airborne division has 931 officers, 167 warrant officers, and 16,503 enlisted men. Composed of all arms and services required for sustained combat, the division has a division headquarters, division headquarters company, band, division headquarters medical detachment, signal company, military police company, ordnance company, quartermaster company, parachute maintenance company, antitank platoon, replacement company, reconnaissance company, engineer battalion, two tank battalions, medical battalion, three airborne infantry regiments, and division artillery. (See Chart I.)

Division headquarters of the airborne division is similar in organization and strength to the headquarters of the infantry division. It has the usual general and special staff sections manned by 58 officers, 8 warrant officers, and 124 enlisted men.

This organization assists the commander. The staff provides information to the commander, submits recommendations on policy, and prepares plans to put the division commander's decisions into effect. The staff also supervises the execution of orders. Many of the special staff officers are commanders of units in the division. These include the division artillery commander, and the engineer battalion commander. The ordnance officer, quartermaster officer, signal officer, and provost marshal supervise tactical operations of units under their control.



SV	ITEM	
A	Airplane, liaison	19
A	Trailer, fuel servicing, 200-gal	1
E	Boat, utility, 25 foot, gas powered	1
E	Bridge, fixed and floating, 90-ton	1
E	Compressor, Air, Truck-mounted, 105 CFM	4
E	Crane-shovel, truck mounted, 20-ton, ¾-cubic yard	3
E	Grader, road, motorized, 12-foot moldboard	2
E	Shop equipment, motorized, general purpose	1
E	Tractor, crawler, diesel, 2,600 to 12,000 bucket loader and dozer	1
E	Tractor, crawler, diesel, 2,600 to 12,000 w/bulldozer	1
E	Tractor, crawler, diesel, 12,100 to 17,000, w/bulldozer	4
E	Trailer, 1¼-ton, arc welder	1
E	Trailer, full, low bed, 8-ton	8
E	Trailer, 2½-ton, slip pole, with bolster	2
E	Trailer, 2½-ton, utility, pole, type I, raft or bridge	20
E	Trailer, 2½-ton, utility, pole, type VIIIA, power boat	1
E	Truck, 2½-ton, bolster body	2
E	Truck, cargo, treadway, 6-ton, w/wn	18
E	Water purification equipment, diatomite, Set No. 3	4
E	Welding equipment, Set No. 1, electric arc, trailer-mounted	1
M	Truck, 2½-ton, laboratory, dental	1
O	Car, armored, utility, M20	1
O	Car, 5 passenger, medium sedan	1
O	Carbine, cal .30, M2	7070
O	Gun, machine, cal .30, M1917A1	41
O	Gun, machine, cal .30, M1919A4	46
O	Gun, machine, cal .30, M1919A6	121
O	Gun, Machine, cal .50, M2, HB	19
O	Gun, submachine, cal .45, M3A1	1
O	Gun, 40-mm, AAA AW	1
*O	Howitzer, 75-mm, M1A1	1
O	Howitzer, 105-mm, M2A1	4
O	Howitzer, 155-mm, M1	3
O	Launcher, rocket, 2.36-inch, M18	2
O	Launcher, rocket, 3.5-inch, M20	1
O	Mortar, 60-mm	1
O	Mortar, 81-mm	3
O	Mortar, 4.2-inch	4
O	Motorcycle, solo, M1	1
O	Mount, trailer, multiple, MG, cal .50	8
O	Pistol, automatic, cal .45, M1911A1	2
O	Rifle, automatic, cal .30, M1918A1	20
O	Rifle, cal .30, M1	1
O	Rifle, cal .30 (sniper) M1C	2
O	Rifle, 57-mm, M18	18
O	Rifle, 75-mm, M20	4
O	Semi-trailer, 45-ton, Tank Transporter, M15A1	1
O	Tank, light, M24 (75-mm gun)	1
O	Tank, medium, M26 (90-mm gun)	1
O	Trailer, ammunition, M10	1
O	Trailer, ¼-ton	7070
O	Trailer, 1-ton	41
O	Trailer, water tank, 250-gal	46
O	Truck, ¼-ton	121
O	Truck, ¾-ton, ambulance, KD	279
O	Truck, ¾-ton, command weapons carrier, w/wn	508
O	Truck, ¾-ton, cargo	24
O	Truck, ¾-ton, cargo, w/wn	36
O	Truck, 2½-ton, artillery repair, M9A1	69
O	Truck, 2½-ton, cargo	69
O	Truck, 2½-ton, cargo, w/wn	12
O	Truck, 2½-ton, cargo, SWE, w/wn	51
O	Truck, 2½-ton, dump	494
O	Truck, 2½-ton, electrical repair, M18A2	84
O	Truck, 2½-ton, instrument bench, M23	38
O	Truck, 2½-ton, instrument repair, M10A1	24
O	Truck, 2½-ton, machine shop, M16A2	9
O	Truck, 2½-ton, shop van, M35	24
O	Truck, 2½-ton, small arms repair, M7A2	3461
O	Truck, 2½-ton, Signal Corps repair, M30	251
O	Truck, 4-ton, cargo, w/wn	6572
O	Truck, 4-ton, wrecker, w/wn	243
O	Truck, 12-ton, tractor, M26A1	81
O	Truck, 6-ton, wrecking, heavy, M1A1	46
O	Vehicle, tank recovery	2
O	Vehicle, utility, armored	11
Q	Pump, gasoline, portable, 20 GPM	12a
Q	Trailer, bath unit, field, M1945	48
Q	Trailer, laundry, dryer	16a
Q	Trailer, laundry, washer and extractor	48d
Q	Trailer, K-52	86
		929
		39

*Issued in lieu of 105-mm howitzer when authorized by theater commander

Chart I. Airborne Division

The division headquarters company, with its 19 officers and 210 enlisted men provides administrative and service support for the division headquarters. As in the infantry division, the headquarters company provides administration, mess, organization maintenance, supply, motor transport, air observation, and local security for the division headquarters. The airborne division headquarters company, in addition, has four pathfinder teams. These four teams comprise a pathfinder platoon. Each team is commanded by a captain. The senior of the four captains also commands the platoon. Pathfinder teams precede the main airborne force setting up homing devices to guide troop carrier aircraft to their drop zones. These teams precede the main force by from several minutes to several hours.

The division headquarters medical detachment (one officer and 13 enlisted men), administered by the headquarters company, provides emergency medical treatment, operates the division aid station, and supervises sanitation for all those divisional units lacking organic medical personnel.

The two warrant officers and 68 men of *the band* furnish music for ceremonies and social functions when not in combat. During combat the personnel may augment CP security forces or act as prisoner of war guards.

Eleven officers, three warrant officers, and 295 men comprise *the division signal company* which provides signal communication for division headquarters and those units operating directly under the headquarters. The company plans and supervises communication training and other signal activities within the division; establishes wire and radio communication from division to subordinate or attached units; provides tele-typewriter, messenger, and message center service for the headquarters; provides signal supply and field maintenance of division signal equipment; makes still and motion pictures and processes still pictures; and furnishes a limited number of motion picture and slide projectors. It differs from the infantry signal company in having only six construction teams instead of seven; and it has no radio relay section.

The military police company has seven officers and 162

enlisted men to enforce law and order, control traffic, protect property, handle prisoners of war, control stragglers, and operate check points. It performs these duties in the area between regimental rear boundaries and the division rear boundary.

Eleven officers, four warrant officers, and 234 enlisted men form the *division ordnance maintenance company.* It issues ordnance supplies, provides ordnance field maintenance for all elements of the division, makes technical inspections of ordnance material, and exercises administrative control of ammunition supply to the division and attached units. Under conditions of minimum activity, this company can furnish ordnance support for all organic elements of the division. Beyond this, other ordnance troops are required for the full support mission.

The quartermaster company is the same in the airborne and infantry divisions. Each has 11 officers, one warrant officer, and 248 enlisted men. Missions of the two companies are the same: providing food; petroleum, oil, and lubricants; quartermaster clothing and equipment; bathing and laundry facilities; and graves registration service. The company provides Class I, II, III, and IV supplies and furnishes bathing facilities for the entire division. It cannot furnish complete laundry and graves registration for the whole division.

The parachute maintenance company with its six officers, one warrant officer, and 247 men is a special unit found only in the airborne division. In addition to a company headquarters and a division parachute maintenance officer section, the company has a supply section, a maintenance platoon, and two packing platoons. This company has personnel and equipment to pack, repair, store, and issue parachutes for the division. The packing platoons pack personnel parachutes and reserve and supply parachutes. After a parachute is jumped it is returned to the parachute maintenance company for inspection and repacking. If damaged, the parachute goes first to the maintenance platoon for repairs and then to the packing platoon. The supply section requisitions parachutes, stocks repacked parachutes sent to it by the packing platoon, and fills unit requisitions for

parachutes. (Originally an Air Force item of equipment, the parachute is to become a quartermaster item now that the Air Force is a separate Department. This may entail the parachute maintenance company's becoming a quartermaster rather than an infantry unit as it now is.)

The two officers and 65 men of the *division antitank platoon* provide the division headquarters' antitank protection. The platoon's three sections are armed with two standard 105-mm howitzers each. An interim weapon until a better one is developed, this howitzer, using suitable ammunition, places direct fire on enemy armor which breaks through forward defenses.

Exactly the same in armored, infantry, and airborne divisions, *the replacement company* has six officers, one warrant officer, and 34 enlisted men to receive and process replacements for the division. Limited personnel compels the replacement company to concentrate on indoctrinating personnel in traditions of the division and preparing them for assignment to units. It performs a minimum of administration. The replacement company may be used to augment local defense.

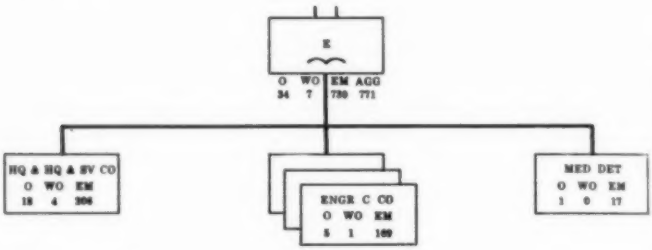
The reconnaissance company provides security and reconnaissance for the division by independent action without reinforcement. Manned by six officers, a warrant officer, and 164 enlisted men, it can execute combat missions suitable for light armored units. Its seven light tanks are its primary armament. These light tanks, the backbone of the reconnaissance force, are supported by riflemen mounted in armored utility vehicles and ¼-ton trucks.

THE ENGINEER COMBAT BATTALION

This unit increases the division's combat effectiveness by general engineer work. (See Chart II.) It has an organic medical detachment to provide emergency medical treatment, to operate the battalion aid station, to supervise sanitation, and to evacuate casualties, if practicable.

The engineer battalion provides engineer staff planning and supervises attached engineer troops, if any. It conducts engineer reconnaissance, repairs and maintains roads, fords, culverts, obstacles (including mine fields), landing

strips, command posts, shelters, and defensive installations. It provides personnel and equipment for assault stream crossings; assault of fortifications; engineer supply service (including water points); and can fight as infantry in emergency.



SV	ITEM	
E	Boat, utility, 25-ft, gasoline-powered	1
E	Bridge, fixed and floating, 50-ton	1
E	Compressor, air, truck-mounted, 105 CFM	4
E	Crane-shovel, truck mounted, 20-ton, ¾ cu yd	2
E	Grader, road, motorized, 12-ft moldboard	2
E	Shop equipment, motorized, general purpose	1
E	Tractor, crawler, 8,600-12,000, w/bucket loader and dozer	1
E	Tractor, crawler, 8,600-12,000, w/bulldozer	8
E	Tractor, crawler, 12,100-17,000, bulldozer	4
E	Trailer, 2½-ton, nlp pole, with bolster	2
E	Trailer, utility, 2½-ton, type I, raft or bridge	30
E	Trailer, utility, 2½-ton, type VIIIA, power boat	1
E	Trailer, full, low bed, 8-ton	8
E	Truck, 2½-ton, bolster body	2
E	Truck, cargo, treadway, 6-ton, w/wn	18
E	Water purification equipment, diatomite, set No. 3	4
E	Welding equipment, set No. 1, electric arc, trailer mtd	1
O	Carbine, cal .30, M2	30
O	Gun, machine, cal .30, M1919A4	18
O	Gun, machine, cal .50, M2, HB	34
O	Gun, submachine, cal .45, M3A1	44
O	Launcher, rocket, 3.5-inch, M20	31
O	Pistol, automatic, cal .45, M1911A1	130
O	Rifle, cal .30, M1	613
O	Trailer, ¼-ton	*(1) 31
O	Trailer, 1-ton	26
O	Trailer, water tank, 250-gallon	4
O	Truck, ¼-ton, M38	*(1) 31
O	Truck, ¾-ton, ambulance, KD	*1
O	Truck, ¾-ton, cargo, M37	4
O	Truck, ¾-ton, cargo, M37, w/wn	*(1) 19
O	Truck, ¾-ton, command, weapons carrier, w/wn	1
O	Truck, 2½-ton, cargo	3
O	Truck, 2½-ton, cargo, w/wn	1
O	Truck, 2½-ton, dump	31
O	Truck, 4-ton, cargo, w/wn	6
O	Truck, 4-ton, wrecker, w/wn	1

*For Medical Detachment

Chart II. Airborne Engineer Combat Battalion

The battalion is composed of a headquarters, headquarters and service company, and three engineer combat companies. The infantry division engineer battalion has one more company. This extra company usually maintains the infantry division's MSR. In an airhead the MSR is the flight route obviating the necessity for a fourth company in an airborne engineer battalion. If the airborne division conducts sus-

tained combat it needs more engineers. Some engineer equipment organic to this battalion is not air-transportable. It is brought up to the division after the link-up with ground forces.

The headquarters, headquarters and service company of the engineer battalion provides command and staff personnel, communication, reconnaissance, supply, and supplemental heavy equipment for the battalion. It installs and operates water points. Its heavy items of engineer equipment include graders, cranes, dump trucks, treadway bridge trucks, and 300 feet of 50-ton capacity fixed and floating bridge.

Each of *the engineer combat companies* is an operating component of the battalion and performs general engineer work. It can perform heavier engineer tasks when reinforced with additional heavy equipment. It fights as infantry in emergency. Normally one engineer company supports an airborne infantry regiment.

THE MEDICAL BATTALION

This battalion evacuates unit medical installations, operates the division clearing station, and furnishes dental service to the airborne division. It has a headquarters and headquarters company, an ambulance company, and a clearing company. (See Chart III.)

Personnel of the *headquarters and headquarters company* command, administer, and perform organizational maintenance for the medical battalion. This company provides medical supplies and dental personnel for the division. All the officers assigned to the company are in battalion headquarters except for the company commander and the battalion motor officer.

The company commander and enlisted personnel necessary to administer the headquarters company are in the company headquarters.

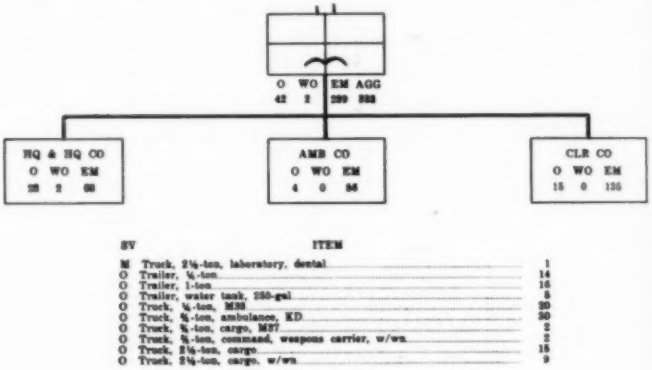
The division dental section has four fewer officers and four fewer enlisted men than the same section in an infantry division.

Other parts of the company are the battalion personnel

section, general and medical supply section, and battalion motor maintenance section.

The battalion executive officer, the S-3, the combination S-1 and S-2, the S-4, the I&E officer, the headquarters company commander, and the battalion motor officer are Medical Service Corps officers; all others are either medical or dental officers.

The commander of the battalion is *not* the division surgeon. That individual is assigned to division headquarters. If the division surgeon decides a certain line of action is feasible he recommends it to the division commander. If the division commander approves the recommendation, he orders the medical battalion to take that action. This is the same staff organization found in the infantry division.



SV	ITEM	
M	Truck, 2½-ton, laboratory, dental	1
O	Trailer, ¼-ton	14
O	Trailer, 1-ton	16
O	Trailer, water tank, 250-gal	6
O	Truck, ¼-ton, M38	20
O	Truck, ¼-ton, ambulance, KD	30
O	Truck, ¼-ton, cargo, M37	2
O	Truck, ¼-ton, command, weapons carrier, w/wn	2
O	Truck, 2½-ton, cargo	16
O	Truck, 2½-ton, cargo, w/wn	9

Chart III. Airborne Medical Battalion

The medical battalion's *ambulance company* has four officers and 86 men divided among a company headquarters and three ambulance platoons. All officers of the company—a captain, company commander, and lieutenants, platoon leaders—are Medical Service Corps officers. Each platoon has a platoon sergeant, a section and liaison sergeant, ten ambulance drivers, and ten ambulance orderlies to assist in handling patients. The platoons evacuate casualties from regimental collecting stations and separate battalion aid

stations to the division clearing station. There are ten ¾-ton knockdown ambulances in each platoon—30 for the company.

The *clearing company,* the third unit in the medical battalion, receives, sorts, and gives temporary medical and surgical care to patients until they can be evacuated. In addition, this company provides definitive treatment and care for patients with minor illnesses, wounds, or injuries. Consisting of a company headquarters and three clearing platoons, this company has 15 officers and 135 enlisted men. Each clearing platoon can accommodate 80 patients normally and up to 120 in emergency. Platoon personnel consists of four officers (two Medical Corps, general duty; one Medical Corps, general surgeon; and one Medical Service Corps, the assistant platoon leader); and 36 enlisted men, including drivers, hospital orderlies, medical technicians, and surgical technicians.

TANK BATTALIONS

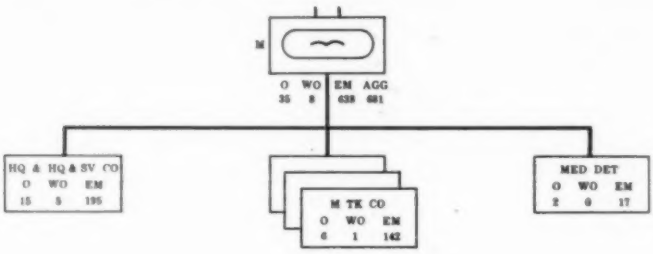
The airborne division has *two tank battalions (medium);* the infantry division, one. However, the infantry regiment has a company of tanks; the airborne regiment, none. Tanks are not organic to the airborne regiment since they are not air-transportable. Once a ground link-up is made with the airhead, tanks from one of the two tank battalions are attached to the airborne regiment. This makes the airborne regiment, after ground link-up, similar in strength and fire power to the infantry regiment. (See Chart IV.)

The tank battalions have the normal mission of closing with and destroying the enemy by fire power, maneuver, and shock action in coordination with other arms.

Each tank battalion (medium) has a headquarters and headquarters and service company, three tank companies, and a medical detachment.

The medical detachment, consists of two officers and 17 men and has four knockdown ambulances for evacuation of casualties. The detachment treats patients, operates the aid station, evacuates casualties (if practicable), and supervises battalion sanitation.

The headquarters and headquarters and service company has 15 officers, five warrant officers, and 195 enlisted men to perform command, administrative, supply, and maintenance functions for the tank battalion. The battalion headquarters part of the company includes the battalion commander and his staff. The headquarters and service company portion has a company headquarters subdivided into a maintenance section and administrative, mess, and supply sections. A battalion headquarters platoon contains enlisted staff assistants and the tank section. There is a battalion administrative and personnel section; a battalion supply platoon; a battalion reconnaissance platoon; and a battalion maintenance platoon. The battalion medical detachment is administered by this company.



SV	ITEM	
O	Carbine, cal .30, M2	278
O	Gun, machine, cal .30, M1917A1	1
O	Gun, machine, cal .30, M1919A4	11
O	Gun, machine, cal .50, M2, HB	13
O	Gun, submachine, cal .45, M3A1	146
O	Launcher, rocket, 2.5-inch, M20	18
O	Mortar, 81-mm, M21	1
O	Pistol, automatic, cal .45, M1911A1	356
O	Rifle, automatic, cal .30, M1918A1	1
O	Rifle, cal .30, M1	19
O	Tank, light, M24 (75-mm gun)	2
O	Tank, medium, M26 (90-mm gun)	60
O	Trailer, ¼-ton	9
O	Trailer, 1-ton	39
O	Trailer, water tank, 250-gal	4
O	Truck, ¼-ton, M38 *(4)	39
O	Truck, ¼-ton, ambulance, KD	*1
O	Truck, ¼-ton, cargo, M37	*1
O	Truck, ¼-ton, cargo, M37 w/wn	2
O	Truck, 2½-ton, cargo	35
O	Truck, 2½-ton, cargo, w/wn	6
O	Truck, 6-ton, wrecking, heavy, M1A1	2
O	Vehicle, tank recovery, M32	6
O	Vehicle, utility, armored, M44	9

*Equipment for Medical Detachment

Chart IV. Airborne Medium Tank Battalion

The tank companies provide the striking power of the battalion. Primary armor (and armament) of each com-

pany consists of 22 M26 tanks (90-mm gun). These vehicles have high cross-country mobility.

Each tank company has the usual company headquarters for command, administration, maintenance, mess, and supply. Two M26 tanks are in this headquarters. Four tank platoons comprise the remainder of the company. Each platoon has five M26 tanks—one for platoon headquarters and four others. Of the company's six officers, one warrant officer, and 142 enlisted men—two officers, the warrant officer, and 42 men are in the headquarters. Each platoon has an officer platoon leader and 25 men.

DIVISION ARTILLERY

Division artillery provides normal artillery support and antiaircraft defense for the airborne division. This includes observation, communication and survey, rapid displacement, and defense against enemy air and ground attacks.

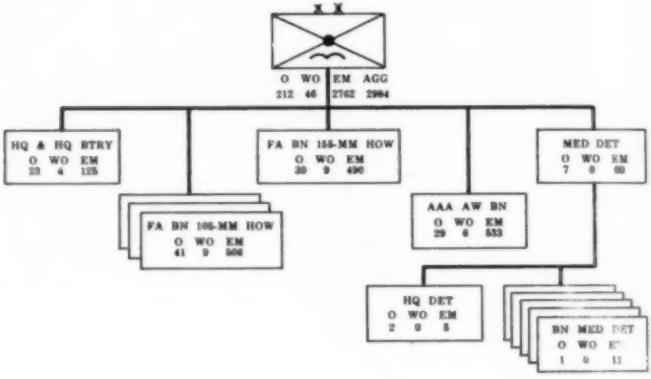
The airborne division artillery consists of a headquarters and headquarters battery, three 105-mm howitzer battalions, a 155-mm howitzer battalion, an antiaircraft battalion, and an organic medical detachment. Its total strength is 212 officers, 46 warrant officers, and 2726 enlisted men. (See Chart V.)

The medical detachment, with its seven officers and 60 enlisted men provides the usual medical and sanitation services and supervision for division artillery. It is divided into a headquarters detachment, to serve headquarters and headquarters battery, and five battalion detachments, one of which is attached to each artillery battalion.

Headquarters and headquarters battery directs and coordinates operations of division artillery. Twenty-three officers, four warrant officers, and 125 enlisted men perform these duties. The battery has a division artillery headquarters with 19 officers and a warrant officer. They include the division artillery commander and his staff. The remaining personnel, four officers, three warrant officers, and 125 enlisted men take care of the usual headquarters functions.

In the headquarters battery are two liaison sections, each of which has two men; a battery headquarters, which in-

cludes the battery commander and the required assistants for command, administration, and mess; an operations platoon (one warrant officer and 41 enlisted men) consisting of an operations section, an instrument and survey section, and a meteorological section; a maintenance section (one warrant officer and 15 enlisted men); a communication platoon (one officer and 43 enlisted men) with a platoon headquarters, wire section, and radio section; and a light aviation section (two officers and five enlisted men).



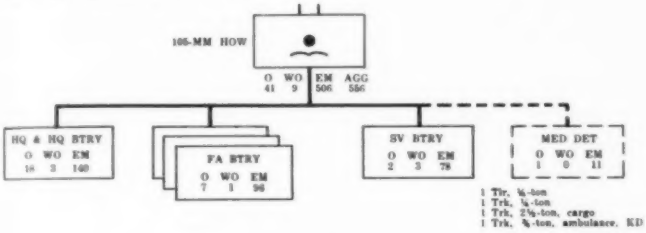
SV	ITEM	
A	Airplane, liaison	10
A	Trailer, fuel servicing, 600-gal	1
O	Carbine, cal .30, M2	2561
O	Gun, machine, cal .50, M2	145
O	Gun, submachine, cal .45, M3A1	369
O	Gun, 40-mm, AAA AW	24
**O	Howitzer, 75-mm, M1A1	36
O	Howitzer, 105-mm M2A1	36
O	Howitzer, 155-mm, M1	12
O	Launcher, rocket, 3.5-inch, M20	799
O	Mortar, 60-mm, M19	3
O	Mount, trailer, multiple, machine gun, cal .50	24
O	Pistol, automatic, cal .45, M1911A1	830
O	Trailer, ammunition, M10	46
O	Trailer, ¼-ton	(*6) 166
O	Trailer, 1-ton	51
O	Trailer, water tank, 250-gal	25
O	Truck, ¼-ton, M38	(*6) 166
O	Truck, ¼-ton, ambulance, KD	*2
O	Truck, ¼-ton, command, weapons carrier, w/wn	16
O	Truck, ¼-ton, cargo, M37	56
O	Truck, ¼-ton, cargo, M37, w/wn	55
O	Truck, 2½-ton, cargo	(*6) 135
O	Truck, 2½-ton, cargo, w/wn	9
O	Truck, 2½-ton, cargo, SWB, w/wn	58
O	Truck, 4-ton, cargo, w/wn	12

*Equipment for Medical Detachment
**Issued in lieu of 105-mm howitzer when authorized by theater commander

Chart V. Airborne Division Artillery

105-MM BATTALIONS

The three 105-mm battalions in division artillery are identical. Each has 41 officers, nine warrant officers, and 506 men. Each battalion can provide close and continuous artillery support for all elements of the airborne division, reinforce the fires of other artillery battalions, and displace rapidly. (See Chart VI.)



SV	ITEM	
A	Airplane, liaison	2
O	Carbine, cal .30, M2	481
O	Gun, machine, cal .50, M2, HB	22
O	Gun, submachine, cal .45, M3A1	67
**O	Howitzer, 75-mm, M1A1	12
O	Howitzer, 105-mm, M2A1	12
O	Launcher, rocket, 3.5-inch, M20	37
O	Mortar, 60-mm, M19	1
O	Pistol, automatic, cal .45, M1911A1	91
O	Trailer, ammunition, M19	12
O	Trailer, ¼-ton	22
O	Trailer, 1-ton	10
O	Trailer, water tank, 250-gal	5
O	Truck, ¼-ton, M38	39
O	Truck, ¾-ton, command, weapons carrier, w/wn	3
O	Truck, ¾-ton, cargo, M37	15
O	Truck, ¾-ton, cargo, M37, w/wn	10
O	Truck, 2½-ton, cargo	24
O	Truck, 2½-ton, cargo, SWB, w/wn	17

*Medical Detachment personnel and vehicles not included in battalion totals.
**Issued in lieu of 105-mm howitzer when authorized by theater commander.

Chart VI. Airborne 105-mm Howitzer Battalion

A 105-mm battalion has a headquarters and headquarters battery, a service battery, and three field artillery batteries.

Headquarters and headquarters battery has a battalion headquarters section and a headquarters battery with personnel totaling 18 officers, three warrant officers, and 140 enlisted men. Battalion headquarters section includes the battalion commander, his executive officer, and staff. Headquarters battery provides facilities for the commander to control his battalion and the personnel required to command, administer, mess, and supply the battery. It includes a battery headquarters (one officer, one warrant officer, and 11

enlisted men); an operations platoon (31 enlisted men); a personnel section (nine men); a communication platoon (one officer and 43 enlisted men); a maintenance section (one warrant officer and 16 enlisted men); three liaison sections of four enlisted men each; a countermortar section of 14 enlisted men; and a light aviation section (two officers and four enlisted men).

The three 105-mm batteries are the firing components of the battalion. They also furnish a portion of the battalion's observation, communication, and survey systems. The airborne 105-mm battery differs from the infantry division's counterpart in that it has only *four* 105-mm howitzers rather than six. This difference results in the airborne division artillery's having only 36 instead of the infantry division's fifty-four 105-mm howitzers. (An additional twenty-four 105-mm howitzers are in the antitank platoons—one platoon is a division special unit and one is in each of the regiments. However, these are interim direct-fire antitank weapons and are not considered as part of the artillery power of the airborne division artillery.)

The 105-mm battery headquarters has the commanding officer, an administrative warrant officer, and 15 enlisted men. A battery detail (one officer and 19 enlisted men) contains drivers, communication personnel, scouts, bugler, instrument operator, and the reconnaissance and survey officer who is a lieutenant. A maintenance section (one officer and 11 enlisted men) has, in addition to the motor mechanics, the mess personnel for the battery. In each of three forward observer sections there are one officer and two enlisted men who go to the front line rifle companies of the supported regiment to observe and adjust artillery fire. A firing battery is commanded by the howitzer battery executive officer who has five enlisted men to assist him in controlling the battery's four howitzer sections of ten men each.

Although the 105-mm batteries are equipped with standard 105-mm howitzers, the table of organization provides for the substitution of 75-mm pack howitzers when authorized by theater commanders.

The service batteries of the 105-mm and 155-mm howitzer battalions are organized exactly alike. Each has a battery headquarters consisting of the battery commander, an administrative warrant officer, and ten enlisted men. Each has a supply section of a warrant officer and six enlisted men. Both batteries have an ammunition train broken down into a train headquarters, of one officer and four enlisted men, and three ammunition sections, each having 12 enlisted men. Each battery also has a battalion maintenance section consisting of a warrant officer and ten enlisted men and a battery maintenance section of twelve enlisted men.

The service battery procures, breaks down, and distributes all classes of supply to the battalion; maintains supply records; and performs motor maintenance not otherwise done in the battalion.

155-MM BATTALION

The 155-mm howitzer battalion provides general artillery support for the airborne division, in addition to observation, communication, and survey, and can reinforce the fires of other battalions. It is organized much like the 105-mm battalions with a headquarters and headquarters battery, three 155-mm howitzer batteries, and a service battery, plus a medical detachment from the division artillery medical detachment. (See Chart VII.)

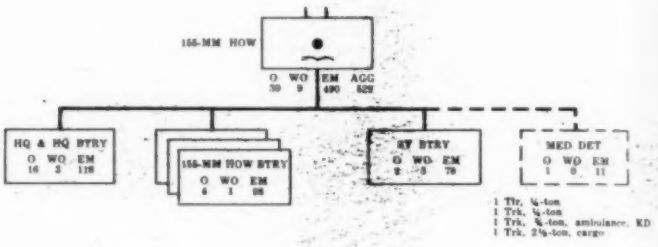
The headquarters and headquarters battery (16 officers, three warrant officers, and 118 enlisted men) is very similar to the corresponding 105-mm battalion battery. It differs mainly in lacking a countermortar section.

Service batteries, as previously noted, are exactly alike in the 105-mm and 155-mm battalions.

Each of the *three 155-mm howitzer batteries* in the battalion has four 155-mm howitzers as opposed to the six in the infantry division's 155-mm battalion. In the airborne division these howitzers are towed by 4-ton trucks whereas the infantry division uses tractors for this purpose. The 4-ton trucks can be air-transported and landed by presently available aircraft while the tractors cannot.

The 155-mm howitzer battery (four officers, one warrant

officer, and 98 enlisted men) has a battery headquarters, a battery detail, a maintenance section, and a firing battery. It does not have the forward observer sections found in 105-mm batteries. The battery has considerable cross-country mobility, can emplace rapidly, and fire at a sustained rate of one round per gun per minute.



SV	ITEM	
A	Airplane, liaison	2
O	Carbine, cal .30, M2	469
O	Gun, machine, cal .50, M2, HB	22
O	Gun, submachine, cal .45, M3A1	52
O	Howitzer, 155-mm, M1A1	12
O	Launcher, rocket, 3.5-inch, M20	36
O	Pistol, automatic, cal .45, M1911A1	91
O	Trailer, ammunition, M10	12
O	Trailer, ¼-ton	21
O	Trailer, 1-ton	9
O	Trailer, water tank, 250-gal	5
O	Truck, ¼-ton, M38	24
O	Truck, ¾-ton, command, weapons carrier, w/wn	3
O	Truck, ¾-ton, cargo, M37, w/wn	25
O	Truck, 2½-ton, cargo	23
O	Truck, 2½-ton, cargo, SWB, w/wn	5
O	Truck, 4-ton, cargo, w/wn	12

*Medical Detachment personnel and vehicles not included in battalion totals.

Chart VII. Airborne 155-mm Howitzer Battalion

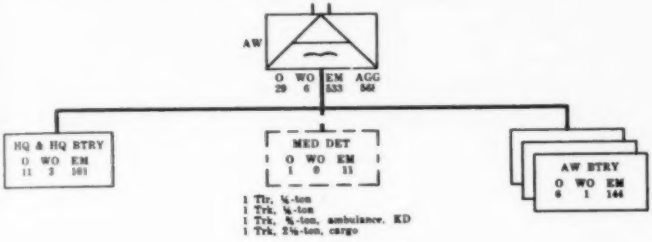
ANTIAIRCRAFT ARTILLERY BATTALION

The antiaircraft artillery battalion has a headquarters and headquarters battery, and four automatic weapons batteries. Its medical detachment is attached from the division artillery medical detachment. (See Chart VIII.)

The battalion provides local antiaircraft defense of assigned installations against low flying aircraft and can fire against mechanized targets. It does not have a great degree of maneuverability.

Headquarters and headquarters battery has the personnel and equipment to direct and coordinate operations of the battalion, procure and distribute all classes of supply, and perform organizational maintenance.

The battery is subdivided into a battalion headquarters section of ten officers, and two warrant officers, and a headquarters battery of one officer, one warrant officer, and 101 enlisted men. These units have the same function as similar ones in units already discussed. In addition the headquarters battery performs service functions since the antiaircraft artillery battalion has no service battery.



SV	ITEM	
O	Carbine, cal .30, M2	583
O	Gun, machine, cal .50, M2, HB	92
O	Gun, submachine, cal .45, M3A1	32
O	Gun, 40-mm, AAA, AW	24
O	Launcher, rocket, 3.5-inch, M20	56
O	Mount, trailer, multiple, machine gun, cal .50	24
O	Pistol, automatic, cal .45, M1911A1	450
O	Trailer, ¼-ton	30
O	Trailer, 1-ton	9
O	Trailer, water tank, 250-gal	4
O	Truck, ¼-ton, M38	24
O	Truck, ¾-ton, cargo, M37	8
O	Truck, 2½-ton, cargo	30
O	Truck, 2½-ton, cargo, w/wn	9

*Medical Detachment personnel and vehicles not included in battalion totals.

Chart VIII. Airborne Antiaircraft Artillery Automatic Weapons Battalion

Each of the *four automatic weapons batteries* has a battery headquarters (two officers, one warrant officer, and 42 enlisted men), and two automatic weapons platoons (two officers and 51 enlisted men).

There are several differences between this battery and the automatic weapons battery in infantry division artillery. First, the weapons are not self-propelled but are trailer mounted and towed by prime movers. This reduces mobility. Each battery has eight quadruple .50 caliber machine guns mounted on trailers, and eight single barreled, towed 40-mm guns instead of eight dual 40-mm self-propelled guns. These changes are necessary to permit air-transportability.

This article and the article in the January issue on the airborne infantry regiment show the new airborne division as quite similar to the infantry division. It is, and it packs a formidable wallop. As aircraft, parachutes, and gliders are developed and as the equipment to be transported becomes lighter, the divisions will become more and more alike. For the present we have to be content with the differences—but they will disappear.

A New Look at Training Films

Compiled by Captain Frank F. Rathbun, Infantry

The motion picture is the most powerful of all our media of communication. It does not require literacy to understand; it is a step closer to reality than is language because it uses images of reality rather than symbols; it is universally understood; it is indigenous to an industrial age.

—Dr. Harris C. Moore
former President of
University Film Producers Assn.

Any infantry instructor who has tried to use training films during the years since the war has probably thrown up his hands in disgust. Granting that he found one suited to his needs, he likely had to spend 15 minutes explaining that we don't have a 12-man squad now, we don't have light machine guns in the weapons platoon, we aren't still fighting the Japs and Germans, and we don't do a lot of things the film shows.

Training films released or being produced this year will take a few wrinkles out of this instructor's brow. *He will soon be able, especially in planning instruction on tactical subjects, to run his finger down a page of FM 21-7 and find the film to suit his needs. (See Figure 1.)

He'll discover some new things about these films. First of all, he'll see infantry units operating as presently organized, and he'll see them using all the new weapons. The language of the dialogue and narration will sound a little strange to him at first—then suddenly he'll realize that it's strange because it's natural. He'll find the men on the screen doing a lot of the talking, not some anonymous off-screen oracle.

*See list of new films at the end of this article.

Figure 1

The instructional material in the film fits the soldier. Although the film may treat of a subject that is initially a responsibility of higher echelons, it pictures the execution of that operation by the man with a pack on his back. The function of the junior officer and noncom is given high billing in every film. (See Figure 2.)

With good films coming out, then, the question arises how to make the best use of them. Training films, like any other teaching method, have certain advantages and many weaknesses. To cash in on the advantages and steer clear of the weaknesses, you should, first of all: (1) consider the general uses the Army intends them for, (2) learn their characteristics, (3) examine the advantages resulting from their use; and (4) recognize their limitations.

USES OF TRAINING FILMS

The most common use of training films by the Army is to instruct. Instructional films range all the way from nuts-and-bolts subjects to topics such as map reading and small unit tactics. A second broad use is to provide information on current material developments and military progress. Helping the individual to understand the conduct that is expected of him as a soldier and making him fit this pattern habitually is the third use of films. The fourth use, one that covers a vast field in the modern Army, is familiarizing the soldier with the political and moral purposes of war, with the nature of our Allies, and with the part played by other branches and arms of the service.

CHARACTERISTICS

Failure to know the characteristics of training films is one of the causes contributing to improper use of them. We spend hours in the Army today trying to learn the characteristics of individuals so that we can place each man where he can best be used. The same approach is necessary in using a training film.

The most marked characteristic of training films is that they deal chiefly with basic subjects and basic patterns of behavior. They are designed for a broad audience.

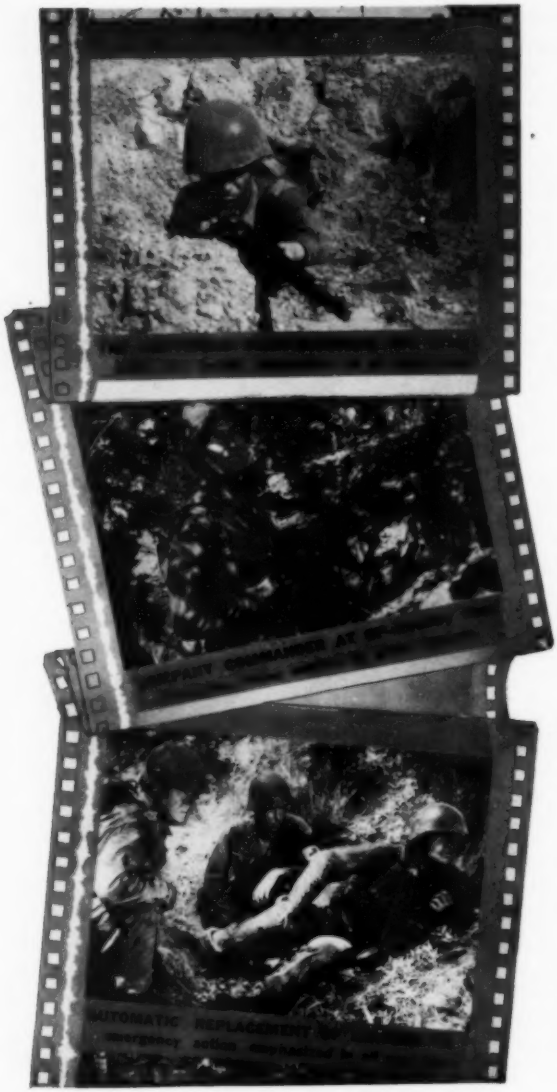


Figure 2

The critic who sees a film and complains, "Cripes, give me a couple of good noncoms, a piece of ground, and I'll teach my men more than that film ever dreamed of," is one of those who has forgotten this first characteristic. Of course he could do better running his men through their paces under good supervision. But he is forgetting that, during a war, time is short and good supervisors are scarce.

Training films are dramatic. They seek to instruct by seeming to entertain. They arouse emotion; the student learns by their emotional appeal. They approach the subject by first creating interest—and as Socrates said, once interest is aroused, half the teaching job is done.

The third characteristic is that films *show* the what, how, and why of a subject instead of talking about it. (See Figure 3.) This characteristic gives films some advantages. At the same time, it constitutes part of their weakness in that they cannot stand alone, but should be used to supplement other instruction.

ADVANTAGES

Volumes have already been written, pro and con, on the advantages of training films—a remarkable fact in itself since educational films are still in their infancy. But most of what has been claimed for educational (training) films can be boiled down to these ten points:

1. They make use of the average person's visual-mindedness. Educators claim that 75 per cent of all learning is accomplished through the sense of sight. Furthermore, films combine the sense of hearing with sight to achieve an even greater percentage of learning.

2. They provide illustration and demonstration not otherwise available.

3. They reach both the high and the low intelligence groups, even though the most intelligent men get the most new learning from a film.

4. They provide a uniform, Army-wide standard of instruction and avoid the ever-present hazard of a poor instructor. They exhibit a high level of performance, because the men in a film are selected demonstrators.

Figure 3

5. They save time by giving the instructor a ready-made aid, which, wisely used, will help him fix student attention, arouse interest, quicken learning, and improve retention.

6. They improve the quality of instruction on matters of team performance because they show in detail the duties of each man and show them in reference to the duties of other team members. The man learns as a member of a team.

7. They create lasting images in the student's mind which later stimulate him to further activity without prodding by the instructor.

8. They center attention on the subject and avoid distraction. The dark room and the bright screen alone see to this.

9. They provide variety and repetition when combined with other forms of instruction. Repetition is necessary to retention of learning, but repetition alone can be dull. Repetition presented in a variety of forms, however, can hammer a point home without fear of putting the audience to sleep.

10. By means of animation, slow motion, time lapse, miniature and micro-photography, they show action which can not be shown by other instructional aids.

LIMITATIONS

According to leading civilian educators, the limitations of the motion picture as an instructional aid fall under six headings. They are:

1. High cost
2. Distribution difficulties
3. Availability
4. Misinterpretation of function
5. Availability of projectionist
6. Lack of suitable facilities for showing

The army instructor is lucky. All but one of these limitations are taken care of for him. The Department of the Army pays the costs, makes them available, and has plenty of theaters to show them in. The Signal Officer on any post has trained projectionists and will set up training courses for unit operators on request.

The only limitation remaining is the misinterpretation of the training film's function. This is a weakness in use, not in the film itself. If the film is regarded and used as a complete unit of instruction instead of as an *aid* to instruction, it will fall short of its goal. Films are meant to supplement the work of an instructor, not to supplant him.

Another failing contributes to a poor understanding of the training film's function. Our past experience with motion pictures has taught us to look upon them as a source of entertainment. The new soldier who has never received instruction by film may be inclined to walk into a theater expecting to be entertained or to get a little rest. A few words by the instructor on the purpose of the film and a little experience with them will change this attitude.

HOW TO USE FILMS

We have seen that the Army has four broad uses for films, that films have certain characteristics, and that many advantages can be obtained from using them properly. What, then, is the proper way to use them?

The first step in the right direction is timing. Show the film at the proper time during the course of study, just when it grows naturally out of past instruction and opens the door to new. It should present new facts and evoke new ideas, but the facts must be understandable and the ideas controlled, not wild flights of fancy.

The time of day is an important factor. A film shown after a heavy meal or at a time when troops are exhausted is about as instructive as a hammock siesta.

One more point on timing: don't show more than one film at a time. To do so cheapens the value of the films and confuses the audience by presenting too many facts at once.

Preview the film, even though you may have seen it before. During the showing watch for errors and make sure the film is suitable and up-to-date. Take notes and analyze the instructional material, looking for the answer to these questions:

1. Will the film fit into the plan of instruction?

2. Will it help obtain the objective of the lesson?
3. Is it adapted to the group?
4. Do any of the military words or terms need to be explained?
5. Are there any scenes which the men might misinterpret?
6. Do any of the scenes need explanation?
7. Are there any which especially fit into the scheme of instruction?

Having previewed the film, check your preparations for showing it. Reserve the film and the room it is to be shown in. And what about this room? Can it be darkened adequately? Will there be sufficient ventilation when the blinds are drawn? Can the men in the rear see over the heads of the men up front? How about the acoustics? The film may have sounded good down at the preview theater, but how will it sound here? One more detail: what about the projectionist? Does he come with the projector or do you have to get one? And the one you get—is he capable?

Then comes the day and hour of the showing. The men have filed in and taken their seats. You could flick off the light and let the film roll. But take one more step.

Introduce the film, tell the men what to look for, tell them the battle importance of what they are about to see, and relate the instruction to their previous training and experience. Do this to clarify some difficult points in advance and to stimulate your class to greater attention. In short, prepare your audience.

After the film is shown, review its highlights, summarize its important points and, if time allows, hold a directed discussion during which the audience analyzes the film's contents.

You are not through yet. Remember that the film cost the taxpayers around $50,000 and see that due value is received. Plan some follow-up activity that will allow the men to apply the lessons learned and to extend their mastery of the subject. Plan this activity ahead of time so that it will emphasize the important parts of the film or the points of instruction that you want to stress. Show your

men the similarity between the film action and what they are doing and encourage them to model their performance after what they saw.

Your follow-up activity can be a local demonstration of some general subject (camouflage, for instance) treated in the film. It can be an application, in which the men do the same things they saw in the film. Or, in cases where the necessary material or terrain is lacking, you can follow up with sand table exercises, discussions, or quizzes.

Finally, at some later date, show the film a second time. At this showing the men will know more, they will see more, they will analyze in greater detail. They may even detect some errors. But, above all, they will pick up new facts and be stimulated to learn more.

INSTRUCTOR'S FILM REFERENCE

To help instructors make the best use of training films, the Department of the Army is resuming publication of the series, "Instructor's Film Reference." These pamphlets, to be distributed to film libraries as the films they cover are released, state the primary audience for which each film is intended and suggest the place in training where it should be used. They summarize the films, provide introductory remarks and sample quizzes, and indicate suitable follow-up activity.

The references are not meant to be the final word on the films they cover. They are offered only as a guide, and to use them blindly without fitting them to local problems would defeat the purpose of the series.

Make these references a starting point for your own planning. Only you know where your men need the most help. With your exact knowledge of their state of training (and this knowledge must be yours) pick the stage of training to show the film, phrase the introductory remarks, and plan the review and follow-up activities.

You civilian component instructors, situated far from film libraries, will find another handy use for the references. You can learn the content of each film from the reference, and avoid the exasperation that has come many

times in the past from ordering films by title only, and then discovering that they did not contain the desired instruction.

Instructor's Film References, as formerly prepared, are now available as "War Department Instructor's Film References" at all Signal Corps film libraries and in the "Training Film and Film Bulletin Digests" binders that were formerly issued by the Army Pictorial Service.

SUMMARY

A preliminary step in the proper use of training films is an understanding of their purposes, their characteristics, and the advantages that can be expected from their use.

To make the best use of a training film:

1. Show it at the proper time during the course of study and at a suitable time during the day, and restrict the showing to one film in each period.
2. Preview the film, make sure that it is up-to-date, and analyze its contents.
3. Check preparations for showing, including reservation for and examination of the room, the seating arrangement, the ventilation, the acoustics, and the abilities of the projectionist.
4. Introduce the film to the class, preparing the men for intelligent observation.
5. Review the film after showing to emphasize its main points.
6. Stage follow-up activity in which the class will extend its mastery of the subject.
7. Show the film a second time.

NEW INFANTRY TRAINING FILMS

These new training films have been completed and distributed to film libraries:

		DATE DISTRIBUTED
11-1488	COMMUNICATION IN THE INFANTRY REGIMENT	Jan 1949
7-1504	RIFLE SQUAD IN ATTACK	Oct 1949

7-1505	THE RIFLE PLATOON IN ATTACK	Dec 1949
7-1510	TROOP MOVEMENT BY AIR	Mar 1949
7-1521	THE RIFLE COMPANY IN ATTACK	Feb 1950
7-1525	AERIAL DELIVERY CONTAINERS —PART 1—LOADING AND DISPATCHING	Jun 1949
7-1540	SMALL INFANTRY-TANK TEAM— PART I—CHARACTERISTICS	Aug 1949
7-1541	SMALL INFANTRY-TANK TEAM— PART II—ATTACK MISSION	Aug 1949

The following training film projects have been filmed at The Infantry School and will be distributed early in 1950:

COUNTERFIRE

THE HEAVY WEAPONS COMPANY IN ATTACK

RIFLE PLATOON IN ATTACK OF A FORTIFIED POSITION

Letters to the Editor

Just finished reading the instructive article titled, THE MEDICAL COMPANY, INFANTRY REGIMENT. In this article a statement is made that "vehicles are used as far forward as practicable for the evacuation of casualties." Believe this to be sound doctrine. However, there are no ambulances available in the battalion medical platoon for this purpose. This brings up the following questions: "Is it permissible to attach ¼-ton ambulances from the collecting platoon to the battalion medical platoons for this purpose? If not, how is evacuation by vehicle accomplished forward of the battalion aid station?"

Sincerely,
MAJOR, INFANTRY

It is not only permissible, but sound policy to use the ambulances of the collecting platoon forward of the battalion aid station whenever practicable. They were placed in the T/O&E for that purpose. When used by the battalion for front line evacuation, these vehicles are under the control of the battalion surgeon operating them.

Litter racks are also easily mounted on the battalion medical platoon ¼-ton truck, and can sometimes be used to augment the front line ambulance service. The standard medical department litter rack can be mounted with a lug wrench, and is hinged so that when not in use it does not interfere with the ¼-ton trailer.

When collecting platoon litter bearers are freed by the forward use of ambulances in one battalion sector, they then become available for support of battalions less fortunately situated. When two, or all three, battalions can use vehicles for evacuation it is customary to continue the policy of working litter bearers ahead of ambulances. This means that litter bearers as well as ambulances will be at-

tached to the battalion medical platoons from the collecting platoon, establishing litter bearer-ambulance relay points well forward in the battalion area. Such reinforcement of the battalion medical platoon gives an extremely rapid system of front line evacuation to the battalion aid station.

Normally, it is contemplated that two ¼-ton ambulances will handle the evacuation needs of a battalion. Over normal terrain and distances they can handle about 50 litter casualties a day. This represents a rather high casualty rate. A rate higher than this would indicate a tactical situation with enough enemy fire to make the use of vehicles impracticable.

In the event ambulances are attached to each battalion medical platoon at this ratio, the three remaining in the collecting platoon (total of nine on the T/O&E) would probably be insufficient to keep the battalion aid stations clear of casualties. The regimental surgeon could then press into service the ¾-ton truck of the collecting platoon and also request attachment of ¾-ton knock-down type field ambulances from the ambulance company of the division medical battalion. A ¾-ton ambulance has the capacity of two ¼-ton ambulances. It is feasible to use ¾-ton ambulances for aid station evacuation if the situation permits evacuation forward of aid stations by ¼-ton vehicles. The ¾-ton ambulances of division, used to evacuate the battalion aid station, would come under the control of the regimental surgeon, and would not by-pass the regimental collecting station.

This also brings up the point of evacuation of casualties from the non-battalion elements of the regiment, such as the heavy mortar company or the tank company. These elements are quite well supplied with transportation, and are not always in contact with the collecting station. They often find it faster to use their own vehicles to evacuate their own casualties as far as the collecting station. Service company is usually to the rear of the collecting station, and usually makes its own arrangements with the nearest medical installation. (See FM 7-30).

In the October 1949 issue of the QUARTERLY, re article, TECHNIQUE OF FIRE, LIGHT MACHINE GUNS: Drawing "D", Figure 2 on page 133 is in error. This figure represents a wide target exactly the same as targets in Figure 1, same page. An oblique target should be:

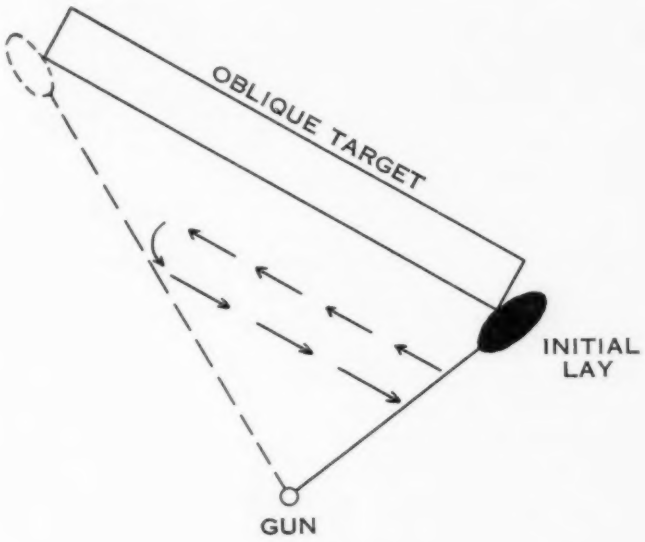


Figure 1.

Captain, Infantry
Ex-Machinegun Instructor

You're right, Captain!

We *did* show a wide target instead of an oblique. Here's a wide target (see Figure 2a) ; here's the target we designated as oblique (see Figure 2b) ; and an actual oblique is as the captain shows it in Figure 1.

Note in Figure 1 that the flanks of the target are not equidistant from the gun. Then compare Figures 2a and 2b - they are alike in that both show the gun equidistant from the flanks of the target. They differ only in that

Figure 2b is drawn at a slant on the page. It's that slant that caused the editors to overlook the obvious error. Despite the slant, it is not an oblique target.

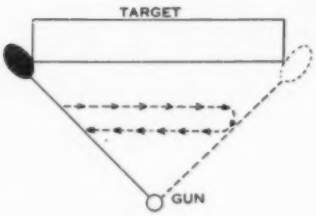


Figure 2a.

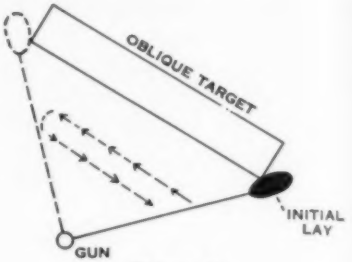


Figure 2b.

Thank you, Captain, for calling it to our attention.

Editor,
The Infantry School Quarterly,
The Infantry School,
Fort Benning, Ga.
Dear Sir:

I am a squad leader. Our company subscribes to your magazine. Some of your stuff is over my head but most of it I like.

I wish you would publish some articles on squad tactics and problems — something like the article in the January issue about the rifle company in attack, only for the squad instead of the company. I'll tell you why. Our platoon has a lot of tactical training in the field and the squads maneuver against each other. The Lieutenant is the umpire. So far my squad has been defeated. I learn a lot from this kind of training because it is interesting. I'd like you to publish some articles about the squad.

Squad Leader,
Rifle Company.

Thanks for your letter, squad leader. We're glad the QUARTERLY gets right down to the squads, because the magazine is for all infantrymen, not just the brass.

We have published some squad tactics articles in the past, though the latest one "Tactics and Techniques of Small-Unit Fighting," appeared as far back as January 1948.

Your letter is going to remedy that. We have lined up some squad articles for future issues and hope to begin a series of them with the July issue of the Quarterly.

EDITOR

FOR SALE

The Infantry School Book Department has the following restricted printed manuals and special texts for sale. Purchases made in writing should be in compliance with paragraph 15c(2), SR 310-90-1, 15 March 1949.

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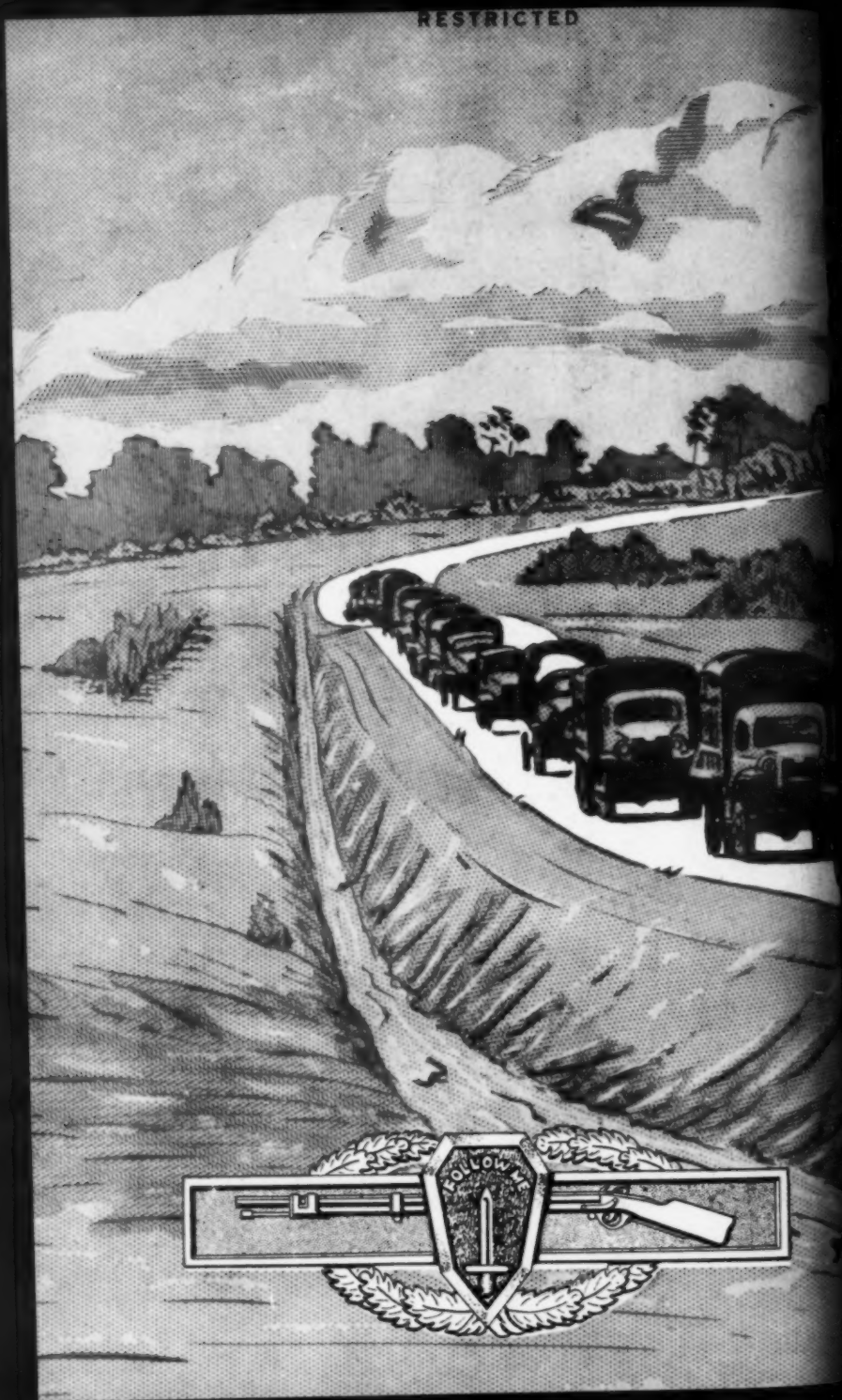
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